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COURSE OF

LECTURES ON THE BLOOD,

AND ON

THE CHANGES WHICH IT UNDERGOES DURING DISEASE,

Delivered at the College of France in 1837-8,

BY

M. MAGENDIE.

LECTURE XXI.

Causes which modify the course of the blood in the capillaries.—Theory of gangrene.—Gangrene from obstructed circulation; illustrative experiments.—Action of the ergot of rye.—Disease of the aorta.—Pathology of dysentery.—Action of pus on the blood.—The albumen and its properties.—Differences between albumen and fibrine.—Action of different substances on albumen.

GENTLEMEN:—Mechanical obstructions in the bloodvessels, no matter of what kind they be, cause the cessation of the circulation; and according as their action is temporary or permanent the blood resumes its course after a time, or its movement is completely suspended, and various disorders, sometimes mortification, follow. Many causes are capable of modifying the course of the blood in the capillaries; sometimes the particles of matter suspended in the fluid are too large for the diameter of the tubes; in other instances the fluid itself is too viscous; in others a tumour developed among the tissues presses on the vessels, and so impedes the movement of the blood. In a few moments after the blood has ceased to circulate in a limb, that limb dies, and putrefaction commences. The total extinction of life in a soft part causes the cessation of all its organic phenomena,—a condition termed *sphacelus* by pathologists. The mortification of a part is generally recognised by the total privation of motility, sensibility, and natural heat, by the disengagement of putrid gases, and by an alteration in consistence and colour. According as this or that symptom predominates, the morbid state is made to fill a particular place in nosological classifications: thus, the *dry* and *humid* gangrene of nosologists differ solely in the quantity of fluid present in the affected part. It is probable that the first species originates more particularly in some obstruction to the arterial circulation, whereby the passage of the blood through the capillaries is prevented; while the second would appear to be principally brought about by venous obstruction and consequent non-return of the blood to the heart. Our forefathers attached great importance to the accurate distinction of cases of dry and humid gangrene; but, as they neglected the study of causes, and directed all their attention to results, the history of these affections is as yet but little advanced. You may ascertain, certainly, that in the one species the eschars are corrugated, hard, and, as it were, mummified, and that in the other they are tumid, soft, and friable; but you will not from this knowledge derive any positive indications as to the treatment best fitted for each case. It is of much less importance to analyse the phenomena that follow gangrene, than those that precede it; the former belong to dead, the latter to living nature.

Some pathologists never see anything in gangrene but a termination of inflammation, and as they call every species of disordered condition occurring in the circulating system an inflammation, their opinion is not devoid of a certain share of plausibility. But the composition of the liquids is a point made of no account by them; the grand affair is to trace out the influence of the inflammatory element. When they find a part of a bright-red colour, sensibly hotter than natural, and at the same time the seat of acute pain, they tell us that the violence of the inflammation has exhausted the organic forces, which, in consequence, react ineffectually against the process of disorganisation. When, on the other hand, a limb becomes bluish and livid, without having presented the precursory signs of inflammation, they, notwithstanding, affirm that this inflammation existed, but assume that it was of a *malignant* kind, or that the vitality of the tissues was diminished before its outbreak. In one case too much fluid reaches a part, and we have one form of

inflammation; in another case too little is conveyed thereto, constituting a second form of inflammation. The quantity of fluid is everything in the production of the morbid phenomena; its qualities are a matter of perfect indifference. Let us see whether this view of the question be the true one.

I injected a drachm of varnish, holding some sifted porphyrised animal charcoal in suspension, into the femoral artery of this dog. The experiment was performed in the morning of the day before yesterday, and the paw is already cold, motionless, and insensible; the animal does not lean on it when he walks, and gives no sign of suffering when I pinch the part, or drive the point of a bistoury into it. The limb is swollen below the ligature of the vessel, and the skin distended by the gases exhaled in the midst of the sphacelated tissues. To their presence is due the particular sensation experienced on pressing the integuments, a sensation which instantly reminds one of the crepitation produced by the accidental entry of air into the cellular tissue. The hair of the limb has in part fallen off, and from place to place the epidermis is raised by an accumulation of brownish liquid, such as occurs after a scald. These phlyctinæ are caused by the extravasation of some of the materials of the blood, which, stagnating in its canals, putrefied therein, and escaped through the pores of their coats. This animal consequently presents all the characters of confirmed gangrene.

Why, we may next inquire, has the introduction of a little varnish and charcoal dust into the vascular system thus determined the mortification of an entire limb? Because the capillary system, which establishes the communication between the arteries and veins of that limb, was mechanically obstructed. Our injection made its way through the trunk and principal divisions of the artery into which we drove it, but when it reached the capillaries it could not get on any further. Charcoal dust, no matter how minutely pulverised it may be, cannot pass through such delicate tubes as those through which the globules of the blood make their way with facility. The blood contained in the arteries and veins being consequently deprived of its natural movement, putrefies, and its decomposition entails that of the neighbouring solids. Life ceases, then, simply because the circulation is stopped through local capillary obstruction.

It might be urged, in objection to this reasoning, that as the femoral artery was tied, the gangrene of the thigh was caused by the ligature of that vessel, and not by the nature of the injected liquid. But on reflecting on the numerous communications which exist between the different parts of the vascular system in the dog, one feels convinced that the mortification of the member cannot have originated thus. Not a day passes without our tying the femoral artery either above or below the origin of the profunda, and yet we never observe the supervention of gangrene. The anastomoses between the arteries of the thigh and pelvis are so extensive that the ligature of the femoral scarcely slackens the circulation, and even this only momentarily: I have even tied the abdominal aorta in these animals, and they have continued to live, without gangrene occurring in any part of their bodies.

Stoppage of the circulation may result from weakening of the contractile power of the heart. In the cholera every observer was struck with the bluish and livid hue of the integuments, the fall of the temperature of the body, and the disappearance, more or less complete, of the cardiac sounds. These symptoms resulted from the want of due energy in the heart, and the consequent accumulation of blood in the superficial veins.

Here is another animal who yesterday underwent an injection of potato-fecula reduced to an exceedingly fine powder; nevertheless, its granules were still more voluminous than the globules of the blood. The vessel operated on in this instance was the carotid, and instead of introducing the fluid in the direction of the current of the circulation, that is, towards the encephalon, I turned the point of the syringe towards the heart, so as to prevent the cerebral circulation from being especially affected. The amylaceous matter was consequently distributed pretty uniformly through the whole arterial system; the passage of the blood became difficult in every point, but not sufficiently so in any one to cause an interruption in the functions of the different viscera. The animal now labours under fever, dyspnœa, cough, inappetence, diarrhœa, prostration, in a word, under all the signs of a general affection of the economy. I shall take care to have the changes in his condition watched: possibly the disease will become concentrated in some particular spot, and if so, this will no doubt be the lung, or some other organ abundantly supplied with capillary vessels; but we must not forget that before becoming local, it had been general.

It is not so easy in all cases to recognise gangrene in a part as the enumeration of the symptoms proper to that state would lead one to believe. A merely temporary suspension of the circulation may be mistaken for true gangrene; the state of stupor of a limb after the receipt of a violent contusion, or from the action of cold, and the presence of deep-seated, blackish ecchymoses, have sometimes been taken for evidences of that condition. Pseudo-membranous productions adhering to ulcerated surfaces have been mistaken in like manner for gangrenous

eschars. But when a peculiar and fœtid smell is exhaled by a part, when putrid gases are infiltrated among the meshes of the tissues, and when the skin is raised into livid-coloured ampullæ, there can be no doubt of its being affected with gangrene; now, every one of these signs are present in the most marked manner in this animal, the subject of our experiment with charcoal.

The separation of gangrenous parts, when left to themselves, is the result of a process which has received the name of *eliminatory inflammation*. If you examine the limb of the animal whose femoral artery we have obstructed, you will perceive a line of demarcation between the dead and living parts; this line corresponds exactly to the point where we tied the vessel. Why, you will inquire, does this eliminatory inflammation fix on this spot for its development rather than any other? Because the vessels beyond it continue permeable, while those on this side are blocked up internally. Here, then, again, we have an hydraulic phenomenon erroneously designated as an inflammation; while the word eliminatory merely expresses what all the world knows, namely, that the dead parts separate from the living. It has been established as a precept in surgery, that amputation of a gangrenous limb should not be performed until the position of this line becomes evident, inasmuch as by operating too early the stump might be also attacked. Practitioners are not all agreed as to the soundness of this precept; some believe it to be of vast importance, others neglect it totally. It is clear that if you act on tissues in which no circulation goes forward, the operation cannot be successful; therefore, the first thing to be done is to ascertain in what spots the blood continues, and has ceased to move. The experiments which we have now in hand appear to me to be calculated to throw some light on these questions; if we succeed in proving that gangrene depends on the stoppage of the blood in its tubes, we shall have supplied some useful hints to the therapeutist.

A great deal has been written on the gangrene determined by the use of ergot of rye. I have made some experiments on this substance, and no matter how large the dose I have administered, either to man or the lower animals, I have never seen gangrene follow. Nevertheless, I am far from contesting the authenticity of the cases in which it is asserted such a phenomenon has been observed in the human subject; they are related by observers worthy of confidence. I may here remark that we are far from possessing any very accurate notions on the action of ergot of rye; it is prescribed in some cases to increase the energy of the contractions of the uterus, in others to diminish it; at one time given to arrest uterine hæmorrhage, at another to excite it, &c.; consequently, as it appears to me, the phenomena following its administration should be submitted to further investigation.

Allow me, Gentlemen, in confirmation of some of the statements I have made, to show you a morbid specimen sent me just before the lecture by M. James. It is the aorta of a woman aged about sixty, presenting at its point of bifurcation into the primitive iliacs a swelling, formed by an aneurysmal dilatation of its coats. These are thick and very manifestly diseased; their internal surface is studded with a multitude of calcareous points, and on rubbing it with the finger, a rough sensation, very different from that produced by the healthy membrane, is experienced. These modifications of texture are of a kind to promote materially the coagulation of the blood; it has been ascertained that whenever that fluid flows through tubes of which the internal surface is deficient in polish, it forms into small masses; these are at first isolated, but subsequently become agglutinated, form into layers, and at length constitute a single coagulum. This is exactly what has occurred in the case before us; the centre of the diseased vessel is blocked up partially by a fibrinous mass (of considerable age to judge from its texture, its yellow colour, and firm consistence), which adheres by different points of its surface to the arterial walls, where these have lost their internal membrane. In other places it is simply in contact with the vessel, or is even separated from it by an interval of one or two lines, thus allowing of the passage of the blood. The coagulum of the aorta gives off two prolongations into the iliac arteries; these vessels are not obliterated, but their capacity is notably diminished. The aorta does not appear to be healthy above the dilatation; through its entire course, from the sigmoid valves to the aneurysm, it is covered with small, rough prominences, and bony and calcareous laminæ. The orifices and valves of the heart are in a normal state.

The nature of the morbid changes suffices to point out what must have been the symptoms during life; inasmuch as the impulsion of the heart, being exhausted by a mechanical obstacle in the aorta, was unable to act with its usual energy in the capillaries and veins, it is evident that the circulation must have been materially impeded, and the return of the blood to the heart rendered exceedingly difficult. This is telling you, in other words, that the lower extremities were œdematous,—a condition which I have been informed by M. James really existed. On a former occasion I called your attention to an example of marked œdema developed in a defibrinised dog; in that case, however, the œdema was general,—here only partial; because, in the former instance, the circulating fluid was altered in constitution, in the latter only its containing tubes. As there

was a clot in the aorta, we can easily understand that the circulation must have been obstructed in the numerous ramifications of that vessel, the activity of exhalation augmented by the slow movement of the blood in the arteries, and the absorption of effused fluids by the veins rendered less perfect in consequence of the sluggish progression of the same fluid in these vessels. I had forgot to tell you that the inferior vena cava was somewhat compressed by the tumour of the aorta; the respective positions of the two vessels no doubt led you to suspect this complication. There was a double cause for the œdema observed, the clot in the aorta and the diminished calibre of the vena cava. Had the patient survived at all longer it is probable that the circulation must have totally ceased in these vessels, and the lower limbs been consequently seized with gangrene.

Here is another pathological specimen deserving of your consideration at the present time,—a piece of intestine taken from the body of an old woman who died in the course of yesterday. You will observe that the mucous membrane is black, but that this tint is not uniformly spread over the entire surface; from place to place are seen circular lines, which by their brilliant black hue relieve the general colour, and give the bowel a streaked appearance. This peculiarity is especially visible in the neighbourhood of the lower orifice of the rectum; it was not met with in so advanced a degree in the vicinity of the ileo-cæcal valve, and in the small intestine there was nothing to be seen but rare ecchymoses separated by mucous membrane of natural structure. The free borders of the valvular folds of the intestine are studded with ulcerations, remarkable for the black shining colour of their fundus, which seems as if it were coated with varnish. These various hues depend on the extravasation of blood, and especially of its colouring matter, between the tunics of the digestive tubes. The mucous membrane presents all the appearances of inflammation, which we are the better able to judge of, as we have it in our power to produce exactly similar ones in the living animal. Inject an alkaline solution into the veins, and you will develop these ecchymoses and morbid transudations on the surface of the intestine. The simple difference will be that, instead of black, they will be red; but the colour depends on the age of the disease; this woman had laboured under dysentery for nearly a year. You will never meet with this black tint in recent effusions; but after a certain lapse of time the colouring matter of the blood gradually loses its red hue, becomes darker and darker in appearance, and finally completely black. I have often had occasion to observe a similar colour in the mucous membrane of the bladder in persons who had died with chronic catarrh of that organ; such an appearance is not met with in acute cystitis.

The nature of the stools in dysenteric affections is not less remarkable than their anatomical characters. The patients so affected discharge bloody mucosities, which have been compared to the washings of flesh; the intestinal secretion, rendered more abundant by the afflux of a greater quantity of liquid to the parts, no longer consists of simple mucus; blood in substance escapes through the porosities or the ulcerations of the internal coat, becomes mixed with the mucus, and carries with it shreds of coagulated fibrine. Far from being unusually active in the inflamed parts, the circulation languishes therein, or is even suspended, as is distinctly ascertainable with the help of the microscope: from this state of things it results that the vitality of the mucous membrane is lessened, and in some points even destroyed. Its tissue softens from the action of intestinal secretions; the fæces, as they pass, detach mortified pellicles of the membrane, and the blood effused underneath it is exposed: such is the mode of production of the ulcerations.

I cannot take upon myself to affirm what was the intimate nature of the disease that proved fatal to this woman. Was the blood altered in constitution? This suspicion naturally entered my mind, for we find here all the disordered conditions of the circulation which characterise deficient coagulability in that liquid. Here is the intestine of a dog killed by an injection of subcarbonate of soda; the lesions are perfectly similar, with the single exception of their colour. It is very possible, then, that the dysenteric diarrhœa, and the other symptoms presented by this woman, originated in a diminution of the coagulability of her blood. M. James found no clots in the heart or large vessels; there was a tolerably abundant effusion in the cavity of the pleuræ, and the pulmonary tissue appeared infiltrated with sanguinolent serosity, precisely as we find it in the pneumonia produced by a superabundance of alkali in the blood.

You remember, Gentlemen, that I lately showed you an animal whom I had forced to swallow half a bottle of claret; such an experiment, performed on the human subject, would have produced none but agreeable effects, whereas it caused the death of this dog in four and twenty hours, though the animal is remarkable for its size and strength. This result will cause you no surprise, if you call to mind the nature of the direct action of the wine in question on blood, more especially the solidification of the albumen it produced, as exemplified in our recent experiments. Its effects have been of precisely the same kind when ingested into the stomach; here is some of the animal's blood obtained from the heart and

vessels after his death; the liquid is of a violet hue, and holds some grumous albuminous matter in suspension; indeed, the whole wears very much the appearance of a direct mixture of wine and blood. There is more than mere analogy of phenomena here; the resemblance between them, as occurring, on the one hand, in the vessel we employed, and, on the other, in the circulating system of a living animal, is perfect. If the doctrines held at the present day be correct, the organs of this animal should present their natural appearance, inasmuch as *they* are assumed to be the sole source of morbid influences, and we have only acted on the liquids. In order to convince yourselves of the emptiness of those doctrines, you need only turn your eyes to the lung of this dog, and examine the remarkable lesions of which it is the seat. In one place you observe the signs of engorgement, in another those of hepatisation, in both instances affecting a particular form, to which the term lobular has been applied by pathologists.

Among other substances which we brought in contact experimentally with blood, you will recollect pus was one of the most important: I have repeated the experiment on the living animal. You are well aware that the globules of pus are four times larger than those of blood, and will, therefore, readily comprehend why this experiment (although the direct addition of the morbid product in question did not destroy the coagulability of the sanguineous fluid) should have been followed by a fatal result. The phenomenon is a simply mechanical one: so long as the injection circulated through tubes proportional in point of calibre to the size of the globules, no ill consequence occurred; but once it became necessary for it to traverse the capillaries of the lung, the infinitely minute diameter of those vessels proved an invincible obstacle to its passage. The animal in consequence perished of asphyxia. The pathological inspection of the organs of respiration will convince you of this more firmly than anything I could say on the subject. The moment I cut into it a quantity of purulent matter oozes forth; it is needless to follow up the examination further, the state of the lung clearly shows that the passage of the blood through it was an utter impossibility, and that consequently in that organ originated the cause productive of death. This fact illustrates a question respecting which I made an observation or two the other day,—I mean the absorption of pus. As the very large proportional size of the globules of that adventitious fluid has been ascertained by all microscopical observers, we are justified in rejecting, provisionally at least, the opinion of those who believe in the occurrence of that phenomenon. The future will decide, I trust, with certainty.

We have next to undertake the study of another proximate principle which enters into the composition of blood, and plays therein a most important part, both in a physical and physiological point of view. Like fibrine it exists in the blood in a state of solution, and like it, too, is capable of forming into a mass and participates in effecting the nutrition and growth of our organs: the principle I allude to is *albumen*. In addition to the property it possesses of retaining the liquid form when separated from the colouring matter, others of its qualities merit particular investigation. We saw, when engaged in the study of the general phenomena of the circulation, that certain liquids, pure water for example, had great difficulty in forcing their way through capillary tubes, but that if some viscid substance were added to them, they no longer encountered any obstacle to their passage. It would appear that the albumen of the blood performs a part of this kind in that liquid, and that when the latter loses its albuminous ingredient in any way it becomes extravasated, and is imbibed by the surrounding tissues. Each of the elements of the complex fluid which we are engaged in studying possesses its own particular characters, and retains them in spite of its being brought into such close connection with the others.

Before commencing our review of the facts bearing on the question of the coagulation of the albumen in the serum of the blood, let me remind you of the necessity of not confounding this serum with what is called the *liquor sanguinis*. As I have already mentioned to you more than once, the former contains no fibrine, while that principle exists in a fluid state in the latter. Be that as it will, the first point of difference we have to notice between the fibrine and albumen is that the latter does not, as the former, ever undergo spontaneous coagulation. The influence of certain agents is necessary in order to cause the formation of an albuminous coagulum; among them ranks heat. So long as the temperature to which this principle is submitted does not rise beyond 60° Centigr. no change occurs in its transparence or viscidity; but when the temperature reaches from 65° to 75° Centigr. coagulation almost immediately occurs. Hence we need never dread the solidification of the albumen in the interior of the vessels of the living subject, for the temperature of our bodies never exceeds 40° Centigr.; although men have borne a heat of 80°. This they have been enabled to do by means of the admirable cooling apparatus supplied by Nature in the organs of cutaneous and pulmonary exhalation; the action of which is such that the body always remains within certain limits of temperature, no matter how widely that of the circumambient medium may vary.

There are other agents—for example, alcohol—which produce the same effect on

albumen. Mixed with serosity, it solidifies that principle, whether the mixture takes place in a glass vessel or in the interior of the body. This will account for the sudden death which occasionally follows an excessive indulgence in spirituous liquors; especially as, if an animal be made to swallow a large dose of alcohol, solidified albumen is found in his vessels after death. You understand the theory of the circulation sufficiently well to know, that the passage of semi-solid blood through the minute tubes of our organs is a physical impossibility. Although albumen, coagulated by alcohol, resembles pretty closely that which has become solid under the influence of caloric, still it differs from it; for instance, in the former case the albumen occurs in the form of small flocculi, whereas, in the latter, it usually assumes that of large masses. This phenomenon of coagulation takes place in all species of albumen of identical character, but we must not, in consequence, confound together those existing in the white of egg and in the serum of the blood; if I am not mistaken these present particular qualities, which show that they are not perfectly similar in nature. MM. Berzelius, Chevreul, and Couerbe, have noted very remarkable differences between these two substances, from the existence of which it is fair to conclude that the same agent might act differently on them. You shall have an illustration of this in the effects produced by mixing a certain quantity of potass with the two varieties of albumen. I first pour a few drops of the alkali into a vessel containing white of egg, and instantly a transparent, solid, and elastic jelly forms, resembling isinglass, and chemically composed of albuminate of potassa: you are aware that animal proximate principles play the part either of acid or base in chemical combinations. On the other hand, when I treat some of the serosity secreted by the peritoneum in a case of ascites, by the same reagent, all the change produced is a scarcely visible precipitation; the remainder retains its liquid condition.

Other proofs of these differences of constitution, no doubt, are to be found, and some of a more decided character than that just illustrated, but chemists are not acquainted with them. Let us try if we may not ourselves succeed in discovering some.

I pour some acetic acid on a small quantity of serum; from their union results an opaline substance, in all probability consisting of acetate of albumen. The same acid causes the formation of a nearly similar coagulum with white of egg. Let us next submit both compounds to the action of a moderately elevated temperature; the albumen obtained from eggs undergoes no change. I next expose that of the serum to the heat of the spirit lamp, and you perceive that I was not deceived in my expectations; we have by this simple process ascertained how the two varieties may be easily distinguished from each other. In proportion as this glass tube becomes heated, the mass it contains gradually loses its consistence, and finally becomes completely fluid, whereas the acetate of albumen procured from eggs remained solid when exposed to the same influence. The liquefaction is not permanent; if we remove the tube from the heat, the coagulum solidifies again.

Here is another mixture of ammonia and white of egg, which has given rise to the formation of a transparent gelatinous precipitate: when heated, this coagulates firmly, assuming the appearance of a vesicular, spongy matter, an albuminate of ammonia. Now, the albumen of serum, when submitted to the same processes, presents none of these characters.

You will remark here an essential difference between albumen and another of the elements of the blood—fibrine; namely, that a variety of substances solidify the former, whereas few possess the property of liquefying it, and that the precise contrary is the truth in the case of fibrine. Thus *nitrate of copper* coagulates albumen, and prevents the solidification of the other proximate principle named. *Nitrate of silver*, a salt very much employed in practice, precipitates albumen in the form of flocculi. I admit that this salt only acts locally; but I am persuaded that if carried into the circulation it would infallibly cause death; this persuasion I will, however, shortly test, by direct experiment.

The *subacetate of lead* also precipitates albumen; and yet it is daily employed to a vast extent in the adulteration of wine. As a medicinal agent its exhibition has been recommended in cases of fever, and for the relief of the abundant expectoration of phthisical patients; but practitioners soon renounced its use, especially those of Germany, as they remarked that the vessels, through which its passage by absorption into the general circulation took place, always contained coagulated albumen.

The *nitrate of bismuth* is less soluble than the preceding salt, and is consequently less easily absorbed; notwithstanding this it solidifies the albumen.

The *sulphate of zinc* and *chloride of tin* also exercise a local action; they, too, coagulate the principle in question.

The *cyanuret of mercury* exercises a very feeble influence over it.

The *bichloride of mercury*, on the contrary, combines energetically with it. To this mode of combination albumen owes its power as an antidote of corrosive sublimate.

The *hydrochlorate of baryta*, which is employed medicinally in diseases of the bones, also coagulates the albumen of the serum, but less energetically than the last-mentioned substance.

The *iodureted hydriodate of potass* has caused only a very trifling degree of coagulation. I have for some time past administered this salt to a young man, a patient of mine, affected with a chronic abscess, and decidedly since he has commenced its use the suppuration, which was previously exhausting him, has considerably diminished. Whether it is by acting on the blood, or in some other way, that its good effects are produced I know not, but I am inclined to think the former the most probable.

Ether faintly affects the albumen of the serum, but acts energetically on that of eggs; this it has converted into a white mass, in the same manner as heat would have done.

Oxalic, hydrochloric, sulphuric, and *nitric acids* have furnished no result.

Boric acid throws down a very slight precipitate.

The *soluble cream of tartar* has formed a coagulum.

The *neutral tartrate* appears to be less energetic.

Seltzer water does not, it appears from the experiment before us, solidify albumen; it seems to me, therefore, well fitted for an habitual drink, for it at once promotes the coagulation of the fibrine, and does not interfere with the albumen; thus possessing two most advantageous properties.

The *hydrochlorate of soda, sulphate of magnesia,* and *tartaric acid,* have proved, in these experiments, without action on the substance under consideration.

EXTRACT FROM A LECTURE

BY PHILIP CRAMPTON, ESQ.

ON THE HISTORY OF MEDICINE.

LITHOTRITY.

I HAVE reserved for the last, the greatest triumph which surgery has achieved, in our own or perhaps in any time, I mean the operation of lithotrity, an operation by which, in by far the greater number of cases, a stone may be removed from the bladder with less pain or danger than is attendant upon any surgical operation that I know of. The first hint of this operation is supposed to have been given by Colonel Martin, who, in the year 1800, constructed an ingenious instrument, by which he attempted to reduce the stone to powder within the bladder. The instrument consisted of a file enclosed in a canula, the file being worked by means of an elastic stilette. This contrivance of Colonel Martin's in no degree detracts from the merit of M. Civiale, who was, beyond all doubt, the first to invent and successfully employ an instrument by which he reduced a calculus to powder, and thus procured its discharge from the bladder.

The operation has since undergone many modifications in the hands of M. Civiale and others; but the greatest improvement, and that which has altogether superseded the original operation of M. Civiale, is the introduction of the two-branch instrument by Mr. Weiss or Mr. Heurteloup, or rather by both; for I believe each was ignorant of the invention of the other. M. L'Estrange is entitled to the praise of having adapted a screw to the moveable branch of the instrument, by means of which, in a great majority of instances, the calculus may be reduced to powder without the use of percussion. It is true, that about the same time the same contrivance was suggested by Mr. Weiss, of London, but I am quite certain that neither of the gentlemen borrowed the idea from the other. Here is the instrument as it is now employed all over Europe; I have suggested a slight alteration, which is I believe generally adopted, it removes the only (and it was rather a serious) objection to the two-branch instrument. The detritus of the stone, instead of being lodged between the jaws of the instrument when they are approximated, in the improved instrument escapes through the slit in the fixed branch. I am indebted to Mr. Oldham, the ingenious engineer to the Bank of Ireland, and now to the Bank of England, for having carried my views into effect, by constructing this beautiful instrument in the manufactory over which he presides in the Bank of Ireland.

A question was raised in the Academy of Medicine in Paris, about three years since, as to the extent to which lithotrity might be considered as superseding lithotomy; the point to be determined was, "whether lithotomy should be considered the rule or the exception." The matter was discussed with great vehemence during several sittings, but no conclusion was arrived at.

I think I am enabled to state, from personal experience, that lithotrity is to be preferred in the great majority of cases to lithotomy, and upon the following grounds. The only reasonable objections which have been made to lithotrity are:—

1. That it is not applicable to children under fourteen or fifteen years of age, yet a great proportion of those who suffer from calculus in the bladder are under that age.

2. It is not applicable to very large and hard stones, as the operation requires to be so frequently repeated that it at length excites irritation and inflammation of the bladder, and the fragments which are too large to be discharged, stick fast in the urethra, exciting a train of most painful and dangerous symptoms.

The answer to the first objection is, that the operation *may* be, and, in point of fact *has* been, performed by Dr. Smith, of Philadelphia, with perfect safety and success on children of three or four years of age, and on one of a year and ten months. The second objection is not so easily disposed

of; it is quite true that a very large stone requires repeated operations for its destruction. I have operated in one case as often as fourteen times; but if the operations be carefully conducted, they are unattended by any considerable pain, and are not followed by the slightest constitutional irritation.

The serious and *real* objection is the stopping of large angular pieces in the urethra, such pieces (*e. g.*) as these. Well, I was led by necessity to practise an operation in the case in which these fragments were extracted, which succeeded perfectly, and which at once removes the objection grounded on the stopping of the pieces in the urethra. If the piece lodge, as it almost invariably does, in the bulb of the urethra, near to its anterior extremity, I cut upon it, and remove it with a common dressing forceps. If it should advance farther, I push it backwards to the same situation and then cut upon it; through the opening thus made I introduce these slightly curved spring forceps, and, seizing the remaining fragments, extract them one by one through the wound in the perineum. By this simple operation, I removed, in the course of a few minutes, all the large fragments which you see in this box. This is not an occasion for entering into a history of the cases in which I have performed the operation of lithotrity; but I may state to this College that the result of my experience is, that the operation of lithotrity should be the *rule*, and that lithotomy should be the *exception*; and it is my firm conviction, that every year more and more of the excepted cases will come within the province of lithotrity. Before I conclude this subject I wish to mention a fact, which I think will be heard with equal surprise and pleasure by this assembly, and that is, that the first operation of lithotrity which perhaps was ever performed, but at all events of which there is any record, was performed in Dublin, about 270 years ago, on no less a personage than Sir Henry Sidney, the Lord Lieutenant, or rather the Lord Deputy for the time being.

CORONER'S INQUESTS.

SUGGESTED IMPROVEMENTS IN THE CORONERS' COURT.

To the Editor of THE LANCET.

SIR:—The very numerous instances of well-grounded complaints made by medical practitioners relative to coroner's inquests, even since the late enactment, together with the pointedly shabby treatment I have myself experienced on several occasions, induce me to request the favour of an early insertion of a few cases, and the inquests resulting therefrom, with some remarks and suggestions touching an amendment of the said Act.

In the year 1835, a Mrs. C——, late of Camden-street, Walworth, was attacked about five o'clock in the morning with apoplexy (I was not called in till seven), and, notwithstanding copious bloodlettings and other means, a fatal termination occurred in about eight hours. Mrs. C—— had a fit of apoplexy a twelvemonth previously, but from prompt treatment she recovered. An inquest was called by one of the beadles, and I was summoned thereon.

In the same year (1835) Mrs. W——, of Trafalgar-street, Walworth, was seized with hemiplegia, which terminated in apoplexy and death. Active depletions, &c., were employed; she was under my care for eleven hours. An inquest was called by the beadle, and I was summoned. Now, Sir, I must observe, that the above cases occurred just previously to the passing of the new Act, when no medical fee was allowed? But might not inquests in both cases have been dispensed with? The deaths were neither instantaneous nor mysterious.

In 1836, Gustavus Giani, late of Camden-street, Walworth, committed suicide (about ten at night) by cutting his throat with a razor in so complete a manner that life must have been extinct in a few moments. I was called and attended instanter. A jury was summoned, but I was omitted—evidently because I should have been entitled to a fee; the new Act being then in force.

On or about the 30th of May, 1838, a precisely similar instance of suicide occurred in Bronti-place, Walworth. Mr. H——, a surgeon, arrived a few minutes before me, and although he had not an iota of evidence to give relative to the causes which led to the sad event, he was summoned and received his fee. Was not this, when compared with the preceding instance, a decided act of favouritism?

On the 24th of September, 1838, early in the morning, I was called out of my bed to Joseph A——, late of King-street, who was found dead in his bed. I remained some time to investigate the cause of death, but was not summoned on the inquest.

On the 28th of January, 1839, an inquest was held on John Luke, alias Moore, who was burnt on the arm and face, and was under my care about twenty hours, when the child (after apparently doing well) was seized with an epileptic fit, and died about an hour afterwards. The beadle called on me early in the morning, not to summon, but to inform me that an inquest was to be held at one o'clock, and asked if I would be at home in case of my evidence being required by the jury. My reply was, that I should not attend without a subpœna, with which, however, I was not favoured. Thus, not having the benefit of my opinion,

a verdict of accidental death was given, instead of one more appropriate. Was this a case really demanding an inquest? Did a shadow of doubt exist as to the causes of death? What praiseworthy economy!

I shall fatigue my readers with only two cases more. On the 30th ult., two inquests were held in Richmond-street; one on Mr. P——, late of George-street (ætat. 57) who died of asthma, having been previously attended by the parish surgeon and given over; the poor man being *in articulo mortis* previously to his wife going on an errand, was found dead on her return. The surgeon was summoned, and although a post-mortem inspection took place without the direction either of coroner or jury, a fee of two guineas was given. How liberal! How courteous!! Was this in accordance with the new Act?

The other inquest was on a child named Birt, late of Clandon-street (ætat. 4), who was accidentally scalded in the bosom by a cup of tea, was attended by the parish surgeon for thirteen days, and died of a deep sloughing ulcer. The surgeon was allowed to give evidence and received his fee. Was not this, also, an instance of favouritism? And, permit me to ask, in the name of common reason, if the slightest necessity existed in either of these cases for the assembling of a jury? Did there exist the smallest doubt or mystery?

In the foregoing cases it were but too evident that, the line of conduct pursued, was bottomed on partiality and pique towards the medical attendants, and for no other reason, I feel convinced, than that, on a certain occasion, I respectfully submitted my opinion upon inquests being held without sufficient proof as to necessity, so as to add largely to the parochial rates. On the other hand, judging from their frequency, Coroners and their dependents do not, generally speaking, lose sight of their own interests, although they very often evince such scrupulous economy in the exercise of their pitiful power of excluding the medical attendant. When an inquest is really required, is it not just and right to admit, that to promote the ends of public justice, medical evidence should be invariably had recourse to? But with respect to the holding of inquests, Blackstone very clearly defines the authority of the Coroner in these words:—"To inquire when any one dies in prison, or comes to a violent or sudden death, by what means he came to his end; and this he is only entitled to do, *super visum corporis*." Rely upon it, Sir, there is too much jobbing in these matters (I could say much were I to be personal), and, without some restrictive influence, coroners' inquests will in time be stripped altogether of the solemnity due on such occasions. Indeed, I think it may safely be asserted, that at least half the inquests held are positively uncalled for.

The following is a quotation from a letter I received a short time since from a Coroner, in reply to one from me, in which certain grievances were stated:—"My general instruction to the constables or summoning officers is, that unless it should appear absolutely necessary for a medical gentlemen to be summoned by my authority on a case, they are by no means to do so, but let the jury say whether or no they require such evidence."

Experience now, Sir, places it beyond a doubt that there is a defect somewhere, either in the law itself, or in the application of it, and, consequently, that an alteration is become an important desideratum; therefore, in pursuance of that object, I beg permission to offer the following suggestions, viz.:—1. When death occurs under the slightest suspicion, that one of the overseers of the parish and the medical attendant should consult and decide upon the propriety of an application to the Coroner for an inquest; and that the medical attendant should always be summoned, as furthering the ends of public justice. 2. Beadles and summoning officers, having salaries from their parishes, should, perhaps, act without inquest fees, by which, under the present system, the great abuse of useless inquests would be principally obviated. 3 As regards jurymen, they should be better paid; this would be but an act of common justice, as time is almost everything to an industrious tradesman. Surely, therefore, 2*s* 6*d*., or even 3*s*. 6*d*., could not be considered exorbitant (even a witness is allowed 2*s*. 6*d*); and I am assured they would feel better satisfied with their own manner of its appropriation.

The preceding is a hasty and imperfect statement, but it embraces objects of much importance to the profession, as well as to the community in general; and, whilst medical gentlemen, one and all, must thankfully acknowledge the boon already gained by your exertions in Parliament, yet they will, I am satisfied, hail with further gratitude any other advantages you may achieve for them. I remain, Sir, your very obedient servant,

W. D. Dray, Surgeon.

Walworth, Feb. 14, 1839.

SULPHATE OF MAGNESIA AS AN ANTIDOTE TO LEAD.

To the Editor of The Lancet.

Sir:—If you think the enclosed case sufficiently interesting and important for insertion in The Lancet, pray make use of it. I am, Sir, your obedient servant,

Robert Cross, Surgeon, &c.

21, Leicester-square,

Feb. 12, 1839.

The following case is offered briefly in testimony of the value of sulphate of magnesia as an antidote in poisoning by lead. The addition of sulphuric acid I considered rendered the decomposing the carbonate into a sulphate more certain, whilst the sulphuric ether acted as an antispasmodic and stimulant, and thus contributed to make the treatment more complete in every point. Mrs. Green, aged 33 years, had been six weeks pregnant, and suffered exceedingly from retchings in consequence. On the 27th Dec. last, feeling more than usually unwell, she took what she thought to be a dose of magnesia, but which was afterwards discovered to have been carbonate of lead, or, as she called it, white cerus powder, in quantity from six to eight drachms (a penny-worth). Its effects only, after some time, led her to suspect the mistake, and she then, at nine o'clock in the evening, sent for me, five hours having elapsed. I found her with a most anxious countenance, in a cold perspiration, respiring heavily, constantly vomiting, her pulse hard, small, and quick, and complaining of dryness of throat, heat of stomach, and very painful colics. I administered immediately,—*Castor oil*, one ounce, with forty drops of *laudanum*, and sent for the following mixture:—

Sulphate of magnesia, 1½ ounce;
Dilute sulphuric acid, 3 drachms;
Spirit of sulphuric ether, 3 drachms;
Water, 5 ounces. Take 2 ounces every half-hour.

The oil was rejected, and, at first, the mixture also, but the latter being promptly repeated, was at length retained, and continued every half-hour alternately with brandy and water warm. The whole set of extensor muscles had become paralysed in a measure, and the flexors contracted so rigidly, and there were such excruciating colics, that the patient generally fainted after each paroxysm. These, however, gradually decreased in intensity, and at twelve o'clock the relief was so decided that I ventured to leave her, returning at two, when I found the pulse more free, the skin warm, the spasms much less severe, and the bowels well relaxed. Half the quantity of sulphate of magnesia was ordered to be left out, and the mixture then continued every hour. At six o'clock I visited her again; she was evidently very much relieved and had slept a little; the bowels were still open and the motions very dark. She was desired to continue as usual until ten o'clock, when I found her so much improved that the same dose was directed to be repeated only every three hours. During the rest of the day (28th) she complained only of occasional gripings, some heat of stomach, nausea, and passing faintness now and then; she enjoyed some comfortable sleeps between, and passed a tolerable night afterwards. On the 29th she had mended considerably. The quantity of sulph. mag. was again reduced one-half, and the bowels remained still relaxed; the stools dark as previously, doubtlessly from the action of hydrosulphuric acid gas in the intestines upon the lead. They continued more or less throughout the 30th and 31st, gradually resuming their natural hue, and the patient, with a little tonic medicine, became convalescent within that time.

CASE OF

PERFECT ANCHYLOSIS

OF THE

FIVE SUPERIOR CERVICAL VERTEBRÆ TO EACH OTHER,

AND COMPLETE DISLOCATION BACKWARDS OF THE FIFTH FROM THE SIXTH, WITHOUT FRACTURE.

By STEPHEN S. STANLEY, *Assistant-Surgeon of the Royal Hospital, Haslar.*

GEORGE WELDON, æt. 37, seaman, lost his footing yesterday evening, the 20th of July, 1838, about nine o'clock, and fell backwards, on his head, on the deck. Immediately afterwards he complained of a severe pain in the back part of his neck and between the shoulders, and of pain and numbness in the arms; his face was pale, and his pulse weak; five grains of carb. ammoniæ, in an ounce of camphor mixture, were administered, after which he rallied. He is worse this morning, complaining now of numbness, not only in the arms, but also in the legs; of the pain in the back part of the neck being more severe, and of inability to turn or move in any direction.

He was admitted into the Haslar Royal Naval Hospital on the 21st of July, 1838, in a state of perfect consciousness; no wound, no external appearance of bruise; both arms are commencingly paralytic, the left the most so; he has not passed urine, nor have the bowels been opened; the pulse is slow, weak, and oppressed; pupils unaffected, nor does he refer to any complaint, save about the muscles of the neck and shoulders.

His breathing is undisturbed; catheter introduced; senna draught at one; enema. Evening: a free evacuation from the bowels; pulse up, and sharp. Repeat enema; bleeding to 20 oz.

22. Respiration is hurried; the pulse is weak; there are continual attempts to expectorate a frothy mucus, but the attempt is ineffectual; is most anxious to inhale air; he desires to be raised higher—higher still—this is accomplished with facility by the rude yet excellent apparatus of Borthwick. Repeat enema; *calomel*, six grains; *jalap*, twenty grains; to be taken at once; urine to be drawn off by the catheter. Noon: he is easier; he breathes more uninterruptedly,

but the pulse flags. Evening: respiration laborious; death is approaching. Died at half-past four o'clock on the morning of the 23rd, exactly fifty-five hours and a half after the accident, and forty-one hours and a half after his admission into this hospital.

Post-mortem Examination.

On the posterior surface of the body, extending from the occiput to as far as the sixth or seventh dorsal vertebræ, there was considerable ecchymosis; and in making a section of the integuments, and subcutaneous cellular tissue, a quantity of blood was found effused into its texture. In prosecuting the dissection further, careful examination exposed to view a considerable displacement *backwards* of the 5th from the 6th cervical vertebræ. The little finger could easily be passed, underneath it, into the spinal canal; the body of the 5th pressed severely on the spinal chord, and rested on the laminæ and spinous process of the 6th cervical vertebræ. The spinal column was now removed (sawing through the angles of the ribs) at the 7th dorsal vertebræ. It was then ascertained, beyond all doubt, that the injury was a complete dislocation, *without fracture*. The ligaments and intervertebral substance were all ruptured; and, when suspended from above, the parts were held together by the vertebral arteries and spinal marrow, with its theca alone, the theca vertebralis being uninjured.

Head.—The cranium thick, and very heavy; the medullary substance of the brain was soft and very vascular. The brain having been removed with difficulty, it was ascertained that the foramen magnum was so much contracted as scarcely to admit the point of the little finger. On closer inspection the constriction was evidently produced by the odontoid process of the axis being much larger than natural, and projecting, in a conspicuous manner, upwards towards the base of the brain, and backwards on the medulla oblongata, which, from the little that was attached to the pons varolii, appeared small, and nearly flat. A section of the base of the cranium was now made for the purpose of ascertaining the exact condition of the odontoid process, and the ligaments in this situation. It was now ascertained that the whole of the cervical vertebræ, from the atlas down to the seat of dislocation, were completely anchylosed. Not the least vestige of ligamentous structure could be observed, with the exception of the capsular and occipito-atlantal ligaments; the capsular ligaments and synovial membranes, when cut into, were found to be so much thickened and altered in structure, as more to resemble cartilage than ligament. No trace could be found whatever of the apparatus ligamentosus and lateral ligaments, connecting the occiput with the atlas; neither was there anything remaining in the form of the ligaments which complete the articulation between the atlas and axis; but Nature, ever bountiful, had formed a beautiful provision for the absence of the transverse ligament, by an isthmus of bone, extending from the anterior aspect of the odontoid process to the posterior concave surface of the anterior arch of the atlas; thus, in most respects, answering every purpose for which the transverse ligament is known, although placed in a situation diametrically opposite.

The most remarkable feature in the whole preparation, and the result of a former dislocation forwards, is the position of the atlas; which, on the right side especially, is pushed forwards and upwards from off the articulating surface of the axis, so as to cause the odontoid process to present itself nearly in the centre of the circle of the atlas. A bridge of bone, exactly half-an-inch in length, and varying from three to four lines in breadth, passes nearly horizontally forwards, from the odontoid process to the atlas, and connects them together; the axis is also pushed forwards in the same manner from the third cervical vertebra, but not to so great an extent. Its length, measuring anteriorly from the superior margin of the ring of the atlas to the inferior margin of the body of the fifth cervical vertebra, is 3½ inches. The diameter of the spinal foramen of the atlas, from behind forwards, is exactly one inch and four lines, and the transverse diameter one inch and half a line. The odontoid process, instead of terminating at its apex in a point, as it generally does, presents a broad and irregular ovoid form, measuring, transverely, half an inch, and from behind forwards, including the bony bridge alluded to, one inch; its length is three-fourths of an inch, and its distance from the posterior arch of the ring of the atlas only four lines.

Remarks.—On the above interesting case Mr. Stanley remarks, that the man had, for some years past, always been subject to a stiff neck, and often complained of rheumatic pains in that region, and of sore throat. He was never on the sick-list, but was unable to move his head to one side, and was compelled to turn his whole body round when he was desirous of looking either to the right or to the left.

Complete dislocations of the vertebræ, without fracture (if the first and second cervical be excepted), are so very rare, that the occurrence of such an accident is doubted, and even positively denied, by some of our best surgeons; it is very desirable, therefore, that well-authenticated cases should be published. Sir Astley Cooper appears to doubt the possibility of a complete dislocation without fracture, though he does not deny that such an accident may occur. Delpech, Boyer, and some others

assert that it is utterly impossible. There are, however, several undoubted cases on record; Mr. Lawrence has published a case that ought to convince the most sceptical. Sir Charles Bell has also published a case of complete dislocation of the last dorsal from the first lumbar vertebra, with entire division of the spinal chord. Professor Rust has also recorded a case of dislocation in the cervical region, which was replaced by himself. The injury occurred in consequence of a severe fall on the head.

Ehrlich has recorded a most remarkable case of dislocation of the atlas. A young man, 16 years of age, fell in carrying a sack of flour upstairs, and his head was forcibly bent forwards by the burthen. He was found senseless, with livid countenance, prominent eyes, tongue hanging out of the mouth, with slow and interrupted respiration, and pulse scarcely perceptible. The limbs were motionless, and apparently paralysed; urine and fæces passing involuntarily; the head was inclined to the right side, and had lost its firmness, so that it fell by its own weight from side to side, when unsupported. The articular process of the second vertebra projected on the left side. Ehrlich considered it a dislocation with pressure on the spinal chord, and caused extension of the head to be made, while he endeavoured to force back the atlas, and bring the second vertebra forwards.

After some effort the replacement was effected with a snap; the head now became steady, and the arms moved; but the patient remained insensible, with dilated pupils; the respiration and pulse were improved; and, on the next day, consciousness returned. A good deal of swelling of the neck and ecchymosis came on, but soon subsided, and after ten or twelve days he quite recovered.

In all the accounts, however, which the author has read he notices, that the direction of the displacement, when resulting from accident, has been forwards and upwards, and not, as in this case, *backwards and downwards*.

With regard to the anchylosis in this instance, there are a number of cases on record very similar, though not to so great an extent. Wynperse and Boyer have both met with cases of dislocation of the occiput upon the atlas, and of the latter upon the second vertebra, with anchylosis. Daubenton mentions a very remarkable case of this kind, where the second vertebra of the neck was pushed so far back as to leave only an interval of three lines between the odontoid process and the posterior arch of the atlas; the second vertebra, at the same time, inclining towards the right.

In this case, related by Daubenton, the distance between the odontoid process and the posterior arch of the atlas is one line less than in the case related above. Professor Sandifort, of Leyden, has described a case where there was displacement of the atlas and axis, with anchylosis of these two bones to each other, and to the occiput; he describes also several others, chiefly of anchylosis, between the occiput and atlas.

There is one remarkable case recorded by him where the occiput, all the cervical, and the two superior dorsal vertebræ were anchylosed; but the articulating processes and laminæ only were implicated, the bodies of the vertebra being still connected by their fibro-cartilage.

It would appear, therefore, that a more extensive case of complete anchylosis than the one now under consideration, has not yet been authenticated and published. There can be no doubt that the primary disease was ulceration of the cartilages, spontaneous dislocation of the first and second cervical vertebræ following.

ABSTRACT OF A REPORT
ON THE
SMALL-POX HOSPITAL.

By George Gregory, *M.D.*

Seven hundred and twelve patients were received into the Small-Pox Hospital in 1838, of whom 416 were males and 296 females. Eighteen were labouring under diseases not variolous, 694 had small-pox in some of its various forms or modifications, many very mildly, but the greater number in a high degree of intensity, rendering the seclusion of an hospital as necessary for the comfort of the individual as for the security of the community. The number of small-pox cases admitted in 1838, exceed the largest number ever received since the foundation of the hospital in 1746; besides which more than 100 persons with small-pox were refused admission for want of accommodation. In 1781, a year of very extensive and fatal small-pox, 646 patients were treated in the building in Cold-bath-fields, and of them 257 died, being at the rate of 40 out of every 100. In 1838, out of 694 cases, the deaths were 188, being at the rate of only 27 in the 100. This saving of 13 lives out of every 100, or 90 in the whole, may be attributed, in part, to the improved accommodations in the present building, imperfect as it is, partly to improved modes of practice, but chiefly to the influence of vaccination, which, where it fails to prevent small-pox, so modifies and alters the human constitution, as to permit the small-pox to run its course with a mildness and safety unknown in 1781.

The number of persons who last year in the hospital passed through small-pox at variable periods, after reputed vaccination, was 298, more than two-fifths of the total

admissions. Of them 114 took the disease in that mild and safe form called, from its close resemblance to the chicken-pox, the varicelloid; 66 had the disease severe at first, but shortened and modified in its subsequent stages, while 118 (or 40 per cent.) underwent the disease in a regular, normal, or unmitigated form; and in them the rate of mortality was nearly the same as in those who had never been subjected to vaccination. The deaths in this class amounted to 31, but from them some deductions must in fairness be made, for in the spring of the year, from the crowded state of the wards, fever of a very malignant character pervaded the hospital, affecting indiscriminately those who had, and those who had not, been vaccinated. To that cause, and to superadded erysipelas, the deaths of 8 or 10 among the vaccinated may be attributed, leaving the total mortality by small-pox after vaccination 21 out of 298, or 7 per cent.

The following table, showing the ages of the patients admitted during the last year, and distinguishing the vaccinated from the unvaccinated, affords some interesting results:—

Ages.	Unvaccinated.		Vaccinated.	
	Admitted.	Died.	Admitted.	Died.
Under 5 years of age.....	42	20	0	0
From 5 to 9 inclusive.	37	19	5	0
— 10 to 14.....	30	8	25	0
— 15 to 19.....	104	32	90	6
— 20 to 24.....	115	50	106	16
— 25 to 30.....	45	23	55	8
— 31 to 35.....	12	7	13	1
Above 35 years of age	11	6	4	0
TOTAL.....	396	157	298	31*

* Of these 6 died of typhus, 3 of superadded erysipelas, 1 of chronic diarrhœa—Total 10

From this table it appears that in the early periods of life the preventive powers of vaccination are almost complete; five vaccinated children only, under the age of 10, having been received, while of the unvaccinated, within the same ages, the number admitted was 79, of whom 31 died. At 10 years of age the receptivity of the small-pox in the vaccinated may be said to commence, but the disorder then shows itself only in its mildest form. From 15 to 25 years of age the disposition of the body to receive small-pox after vaccination increases, and the severity of the disease augments in a like ratio. The table indicates a decline in the number attacked by small-pox after the age of 25, but the diminution is equally great among the unprotected as among the vaccinated, and may, therefore, be owing to causes independent of vaccine agency.

A variety of tables, illustrating the same facts, have recently been published on the Continent,† and they all concur in showing that the security which vaccination offers, perfect as it is in the early periods of life, undergoes a material diminution from the period of puberty to that of confirmed manhood.

† Also in THE LANCET. (See Nos. 15, 16, 17, and 19, Vol. I., 1838-9.)

This important principle, now clearly established, could not possibly have been known to Jenner, and the early supporters of vaccination. Though it detracts in a certain degree from the high pretensions with which vaccination was introduced into public notice, it yet offers no reason whatever for neglecting vaccination, nor derogates from the merits of Jenner. Vaccination, shorn though it be of some of its attributes, and incapable as it is now proved to be of banishing small-pox from the earth, yet remains the greatest boon which medical science ever gave to mankind.

Two important questions arise out of the statements now made: first, how far the deterioration of vaccine security is owing to defective virus, imperfect modes of vaccination, or other causes under our control; and, secondly, how far such deterioration, whether arising from imperfection in the agent itself, or in the mode of its application, admits of remedy by the process of revaccination.

With respect to the first of these questions, it seems probable that the diminution of vaccine energy, commencing as it does at a particular period of life, and gradually augmenting for a certain number of years, cannot really be owing to defective modes of operation, at least to the extent supposed by many; that it has its origin in certain

progressive changes taking place in the human frame, and, consequently, that there is no rational ground for believing that recurrence to the cow for fresh matter, a greater number of incisions, vaccinating at a later period of life than has hitherto been usual, or any other alteration in the present mode of conducting the process, will materially lessen the number of cases in which small-pox succeeds to vaccination. The defect, whatever be its amount, is in the agent itself, and not in the mode of its employment.

With reference to the second question, involving the propriety of revaccination, it may be observed, that this practice is comparatively of recent date, and that the means of judging whether it really possesses the power of renewing the security deteriorated by time are still very scanty. We need not wonder, therefore, at great differences of opinion existing on this subject. In Germany, the practice of revaccination is considered to be of unquestionable value. In France, on the other hand, it is viewed as a measure of trivial importance. Without prematurely venturing any decided opinion on the question, the author of the Report is disposed, until further experience has been acquired, to recommend revaccination as a precautionary measure; and thinks that the earliest age at which it can be practised with any prospect of real advantage is ten years, and that the period of life best adapted for it is from 15 to 20.

If the experience acquired at the hospital can thus be rendered useful to the public generally, it must still more strongly serve to direct the attention of the Governors to the state of the building. Whoever reflects that forty years after the discovery of vaccination, in a country where every encouragement is held out, both by the Government and the medical profession universally, to the practice of vaccination—in a town where the opportunities of efficient vaccination are immense, and small-pox inoculation unknown, the calls upon this hospital should have been greater than in any year since 1781, will at once acknowledge, that this institution is entitled to recover that share of public patronage which it once enjoyed, and that its accommodations should be adapted to the increased size of the metropolis, and the altered circumstances of the times. The necessity of withdrawing the mild and varicelloid cases from all contamination with the aggravated forms of the disease, has long been felt, but was never so strikingly displayed as during the past year. This measure of great and indispensable necessity, cannot be effected without devoting the whole of the present building to the reception of small-pox cases. This involves the necessity of a separate building for the purposes of vaccination, a plan which has often been recommended on other grounds, and which, we trust, the liberality of the public will enable the Governors to carry into effect, without any serious drain upon the permanent resources of the charity.

The vaccination department of the institution has been in full activity during the past year: 4830 persons have been vaccinated at the hospital; 1558 medical gentlemen have been provided with abundant supplies of vaccine lymph. The applications from the country have increased very considerably, and but for the heavy expense of postage would have been still more numerous.

There have been received from Bristol, Aylesbury, and the north of Scotland, supplies of matter recently taken from the cow, with which experiments have been made, but as none of them appear to exceed, or even to equal in intensity the lymph now in use, it has not been thought advisable to make any alteration. Recurrence to the cow for fresh lymph is not a measure lightly to be had recourse to, nor should it be advised until the old and tried stock has obviously degenerated.

February 1st, 1839.

THE CAUSES AND MORTALITY OF FEVER AND SMALL-POX AT GLASGOW.

(From Dr. COWAN's "Vital Statistics of Glasgow.")

CAUSES peculiar to Glasgow, giving rise to fever, and favourable to its propagation, must exist, and it is the duty of the civic authorities to investigate these causes.

Manchester, with a population at the last census of 227,808, and which, in its constitution and density, must nearly resemble that of Glasgow, has been for years, and is now comparatively free from fever. The average annual number treated in the Manchester Fever Hospital for seven years, ending in 1836, was..... 497

The annual average in Glasgow during the same period..... 1842

The number treated in Manchester Hospital in 1836..... 780

The.....Glasgow..... 3125

Fever is now diminishing in Manchester, while it is increasing in Glasgow.

The prevalence of fever in Glasgow, when compared with Manchester, is still more strikingly contrasted by the great change which has taken place in this respect. From 1797 to 1806, both inclusive, the number of the fever patients treated in the Glasgow Infirmary was only 883, while those treated in the Manchester Fever Hospital amounted to 4618.

In Leeds, too, another manufacturing city, with a population at the last census of 123,393, the number of patients affected with fever and treated in hospital, amounts

to 1923 during the last seven years, giving an annual average of only 274.

In Newcastle and Gateshead, with a population of 57,917, the number of patients treated in the institution for the cure and prevention of contagious fever, during the last seven years, amounts to 276, or 39 annually.

In Liverpool, with a population of 189,242, 1700 cases of fever were treated in the hospital during 1836; but many of these belonged to the seamen of the port, a numerous class of its population.

A comparative view of the state of fever in other towns in England, contrasted with that of Glasgow, would only place the insalubrity of our city, as far as fever is concerned, in a more prominent and alarming point of view.

In Edinburgh, with a population of 162,156, the number of fever patients admitted into the Royal Infirmary, for the last three years, has been as follows:—

Year ending 30th September,..1834..	712
.....1835..	900
.....1836..	658
	2270

Giving an average of 756⅔ per annum.

It has been proved that since 1816, but more particularly during the last seven years, fever has been steadily increasing in the city of Glasgow, and that its victims constitute within a fraction of 55 out of every 100 patients treated in the hospitals, independently of those treated by the district surgeons within the burgh.

This increase, especially during the last seven years, has taken place, not in years of famine or distress, but during a period of unexampled prosperity—a period when the wages of labour have been ample—the prices of provisions comparatively low, and every individual, able and willing to work, secure of steady and remunerating employment.

Many of the causes of the production and propagation of fever must be ascribed to the habits of the population; to the total want of cleanliness among the lower orders of the community; to the absence of ventilation in the more densely peopled districts; and to the accumulation, for weeks or months together, of filth of every description in our public and private dunghills; to the overcrowded state of the lodging-houses resorted to by the lowest classes; and to many other circumstances unnecessary to mention.

The rate of mortality in a fever hospital depends on a great variety of circumstances, over many of which the physician has little or no control. It varies according to the proportion which the accommodation bears to the number of the diseased in the town or district in which the hospital is situated—to the facilities which may be afforded, or the restrictions opposed to the admission of patients—to the relative amount of accommodation for the sexes—to the ages of the patients admitted, and to the age to which admission is restricted.

It is dependent, too, on the intensity of the prevailing epidemic and on the period of the epidemic, as it is well known that epidemic disease is generally more fatal at the commencement and rise, than at the period of its decline and termination.

The season of the year also gives occasion to a great and varying mortality in fever, as well as in other diseases.

Another cause of the conflicting statements regarding the mortality of fever in hospitals, arises from the variation in the mode of computing the number of deaths occurring immediately after admission. In some hospitals all the deaths are included, however short the period of residence may have been: in others, the deaths within 12, 24, 36, or even 48 hours, are excluded from the list.

The most striking discrepancies in the rate of mortality are those that exist between the English and Irish hospitals. This will be best seen by taking the extremes. Thus, "in Guy's Hospital, London, under the attendance of Dr. Marct, the deaths in 1816 are said to have been 1 in 4, and in the London Public Dispensary, under the charge of the celebrated Willan, during the autumn months of 1799, no less than 1 in 2, or a half; while in Dublin, during 1817, according to Percival, the average of the whole receptacles was 1 in 22, and in Stevens' Hospital, taken separately, if the printing be correct, only 1 in 50." It is obvious, from this statement, that extreme pauperism must have broken down, on this occasion, all the usual barriers to hospital admission.

In accompanying tables, Dr. Cowan gives the number of male and female patients admitted into the Fever Hospital at each age; the number of deaths at each age occurring within the first 24 hours of the patient's admission; the rate of mortality calculated from the deaths exclusive of those dying within 24 hours of their admission; the rate of mortality at each age, distinguishing males from females; and the mortality at each age, without reference to sex.

The first point in Dr. Cowan's tables, for which we regret that we have no room, that attracts our attention is the relative mortality of the two sexes, and certainly it is very remarkable. The total mortality of the males is 1 in every 6¾, while of the females it is only 1 in every 11¼.

In the males the mortality is 14.83 per cent.	
In the females.....8.92.....	
The deaths of the males within the first 24 hours amount to.....	17
The deaths of the females.....	9

At almost every period of life embraced in the table, the mortality of the males from fever exceeds that of the females.

At the age of 15 the mortality is very nearly the same in both sexes.

At the age of 30 the mortality of the males is more than double that of the females.

The rate of mortality is greatest in females at the age of 45.

The mortality of the males under 20 years of age.....6.04 per cent.
.....females.....4.90.....
The total mortality under 30 years of age.....8.35 per cent.
.....above 30....24.84.....

From the table of mortality without reference to sex, appears that, after the age of 10, the mortality from fever slowly increases till the age of 35. From the mortality being 2.63 per cent. at 10 years of age, it has gradually risen to 14.92 at 35: at 40 it is 22.36, and at 50, 39.06.

The mortality of the Scotch and Irish was precisely the same, while that among the English, if any inference can be drawn from such a small number, was considerably less.

The remarks of Dr. Cowan on small-pox are so interesting that we shall extract them without condensation.

The introduction of inoculation, although it diminished the relative mortality, will, it is believed, be found to have increased the absolute mortality of small-pox; as by this practice the disease, which, before its introduction, occurred epidemically only at long and uncertain intervals, was kept constantly prevailing at all times and seasons, thereby producing a mortality, especially among children, which could now be scarcely credited, but for the attested registers of its ravages. The fact is undoubted, that small-pox inoculation did not effect that saving in human life so generally attributed to it. While it was adopted by the upper and intelligent classes of the community, it was rejected by the lower; and the bills of mortality prove the deaths by small-pox to have increased after the practice of inoculation was introduced. In this city small-pox inoculation was generally practised, and recommended by medical practitioners, during the period embraced in the following table. We have no data from the Glasgow bills of mortality to prove the fact of the mortality from small-pox being greater at the close than at the commencement of the eighteenth century, but it has been ascertained in other towns, and the following extract from Heberden, confirms the assertion in regard to London.—"Out of every thousand deaths in the bills of mortality, the number attributed to the small-pox, during the first thirty years of the 18th century, before inoculation could yet have had any effect upon them, amounted to seventy-four. During an equal number of years, at the end of the century, they amounted to ninety-five. So that, as far as we are enabled to judge from hence, they would appear to have increased in a proportion of about five to four." I have, therefore, no hesitation in ascribing a large proportion of the mortality recorded in the following table to the practice of inoculation for the small-pox, being borne out in my assertion by the above quotation from Heberden, and by the medical statistics of other cities.

The following table exhibits the total deaths under ten years of age, and the deaths under ten from small-pox in Glasgow, for thirty years, divided into three equal periods; and is compiled from tables prepared from the registers of this city, by the late Dr. Robert Watt, and published in the appendix to his work on chincough.

TABLE 1.

Year.	Total.	Small-pox.	Year.	Total.	Small-pox.	Year.	Total.	Small-pox.
1783	719	155	1793	1126	389	1803	940	194
1784	877	425	1794	759	235	1804	863	213
1785	744	218	1795	1048	402	1805	884	56
1786	941	348	1796	797	177	1806	786	28
1787	1016	410	1797	884	354	1807	899	97
1788	1059	399	1798	864	309	1808	1775	51
1789	1058	366	1799	1105	370	1809	1187	159
1790	1236	336	1800	746	257	1810	1027	28
1791	1367	607	1801	766	245	1811	1274	109
1792	902	202	1802	985	156	1812	1278	78
1st period.	9919	3466	2nd period.	9080	2894	3d period.	10913	1013

The ravages of small-pox were never before more vividly illustrated than in the foregoing table.

In the first period of ten years, the total deaths under ten years of age amounted to 9919, and the deaths from small-pox, to 3466, being 35.94 per cent. and rather more than one-third of the whole deaths under ten.

In the second period, the total deaths under ten are 9080, and the deaths from small-pox 2894, or 31.87 per cent.; and in the last period, the total deaths under ten are 10,913, and the deaths from small-pox 1013, or only 9.28 per cent.

The saving of human life in infancy by the introduction of vaccination is thus most satisfactorily established, as the table shows an improvement to the extent of 25 per cent., and if to this be added the lives saved above ten years of age, which we have no means of exhibiting from the Glasgow mortality bills, we will be able to judge of the benefits conferred on society by Jenner.

I am not aware that small-pox was so fatal in any town as it appears to have been in Glasgow. In Berlin, the deaths from small-pox were for a short time, as 1 in 4, but more generally as 1 in 7, of the whole deaths under ten years of age; while in the city and suburbs of Glasgow, it was fatal in the proportion of one in three of the deaths under ten years, and that not for one or two years merely, but for a long period.

The great saving of human life is rendered apparent from the third period embraced in the table. Up to the very moment of small-pox inoculation being superseded by cow-pox the mortality is immense, and the instant the latter is employed, the mortality becomes trifling in comparison.

From 1812 till the publication of the mortality bill for 1835, there was no statement made of the number of deaths annually from small-pox. From the increased rate of mortality of late years, and the period of life at which the augmented mortality has taken place, I have for a long time expressed the opinion that small-pox has been prevailing to a greater extent than has been generally supposed.

This must remain a matter of conjecture for the period prior to 1835, unless some person, possessing the persevering industry of Dr. Watt, shall attempt the task of completing his tables from 1812 till 1835.

The following table gives the deaths from small-pox, according to the mortality bills for 1835-36, but does not include the whole of them, as the causes of death were not ascertained in many instances; and at the Tollcross burying-ground, in which the interments, in 1835-36, amounted to 645, the diseases have not been recorded.

TABLE 2.—*Deaths from Small-Pox*, 1835-36.

	Under 1 year	1 to 2	2 to 5	5 to 10	Above 10.	
1835	204	154	75	17	23	= 473
1836	202	174	144	23	34	= 577
	406	328	519	40	57	=1050

The annual average number of deaths under ten years of age, for ten years prior to 1812, from small-pox, was 101, while, during the two last years, they have amounted to 903.

TABLE 3.—*Number of Patients, with Small-Pox, annually admitted into the Glasgow Royal Infirmary, from* 1795 *till* 1836.

Year.	No.	Year.	No.	Year.	No.	Year.	No.	Year.	No.	Year.	No.
1795	4	1802	—	1809	10	1816	14	1823	46	1830	10
1796	2	1803	—	1810	2	1817	7	1824	37	1831	12
1797	4	1804	1	1811	—	1818	11	1825	3	1832	3
1798	9	1805	3	1812	4	1819	7	1826	1	1833	14
1799	—	1806	1	1813	2	1820	—	1827	25	1834	92
1800	1	1807	5	1814	2	1821	33	1828	4	1835	72
1801	1	1808	—	1815	4	1822	5	1829	1	1836	110
	21		10		24		77		117		283

This table shows a progressive increase in the number of patients with small-pox admitted into the infirmary for some years past, and also how small a proportion of the adult population was admitted during the years in which, as appears from Table I. small-pox was carrying off hundreds annually under ten years of age.

Of the 110 patients treated in the infirmary in 1836, ninety-five came under my charge; and the next table gives the sex, nation, and district of each patient, with the proportion vaccinated, and the number of deaths. The patients, with three exceptions were adults.

TABLE 4.

	Highlanders.	Lowlanders.	Irish.	Total.
Males	34	11	4	49
Females	36	10	0	46
	70	21	4	95
Males vaccinated				32
Females	17	6	0	23
Males unvaccinated				17
Females	19	4	0	23
Males dead	9	3	1	13
Females	10	3	0	13

The first remarkable feature in the above table is, that out of 95 patients affected with small-pox, there are only four natives of Ireland.

The second is, that of 91 natives of Scotland, 70 are Highlanders, and 21 natives of the Lowlands. A very large proportion of the Highlanders were from the remote islands, and all of them, without a single exception, had recently arrived in Glasgow.

Fifty-five of the patients had apparently been vaccinated, and forty never had this operation performed. Nearly one-half of the Highlanders had marks on their arms, but these were not in general the result of what I would consider perfect vaccination.

No death occurred in any individual who presented the appearance of having been properly vaccinated.

The Irishman who died was a vagrant, who had not been vaccinated, and who was exposed to the contagion of small-pox in a lodging-house at Finnieston.

The occurrence of so many as ninety-five cases of small-pox would at first sight induce us to believe that the efficacy of vaccination was not so great as was anticipated by Dr. Jenner. An investigation, however, alters our views upon the subject; for if any additional argument in favour of vaccination was awanting, it might be amply supplied by the table before us. The natives of Ireland furnish, as we have already seen, 30 per cent. of the admissions to the Fever Hospital, while of ninety-five individuals with small-pox, four only are Irish. There must exist some cause for this immunity from small-pox in the Irish, and it is to be found in the general practice of vaccination among the lower classes, by the surgeons of the country, and other dispensaries of Ireland. To the neglect of vaccination, and to the practice of it with impure lymph, deteriorated perhaps in the transmission, must be ascribed the prevalence of small-pox among the Highlanders.

Having proved, from the records of the infirmary, and the mortality bills of the city, that small-pox is decidedly increasing, and that its mortality has been alarmingly great for the last two years at least, and most probably for a longer period, it becomes a subject of inquiry, to what cause is the increased frequency and mortality of small-pox to be ascribed? I have no hesitation in affirming, that it is owing to the neglect of vaccination, and not to the occurrence of small-pox after vaccination.

From the early period of life at which the deaths from small-pox took place, as seen in Table II., by which it appears that of 1050 deaths, 953 were under five years of age, I am warranted in the inference, that vaccination had never been performed; and, from the small number of deaths after the age of ten, I consider it as demonstrated, that death from small-pox after vaccination is very rare; for it must be kept in view, that the majority of the patients above ten, who died from small-pox in 1836, were inmates of the hospital, none of whom had been vaccinated.

The increasing prevalence of small-pox should attract the attention of the public. It is a disease which has caused a mortality during the last two years inferior only to that of typhus, and it is one which could be eradicated under proper management at a trifling expense.

It may be said that there already exist in the city three establishments for affording vaccination to the poor gratuitously. To this I would reply, that "the number now vaccinated at the three stations put together do not amount to the number vaccinated in the Faculty Hall alone in the early years of the practice," notwithstanding the great increase in the number of inhabitants. Besides, it is self-evident, that the three institutions, though efficient in some respects, have failed to eradicate the small-pox, and that other measures should be adopted. Let the proper steps be taken, and the result would soon be apparent, in a diminished mortality of the infantile population of Glasgow.

EPIDEMIC TYPHUS FEVER IN THE COUNTY OF TIPPERARY.

To the Editor of THE LANCET.

SIR:—Having seen an interesting account of an epidemic fever, in THE LANCET for Oct. 6, 1838, by Dr. Kelso, of Lisburn, Ireland, I send you a report of an epidemic, with cases, which occurred in this neighbourhood at about the same period, although it was not marked with the same complication as is described by Dr. Kelso.

I remain, Sir, your obliged,

MICHAEL J. MAC CORMACK, M.D.,
Physician to the Mullinahone Dispensary, County Tipperary.

Mullinahone, Callan,
Feb. 8, 1839.

In the month of December, 1837, shortly after obtaining charge of this dispensary, typhus fever raged to a frightful extent in this village and the surrounding country, which I found, on inquiry, had been prevalent for the previous two months. Having no fever hospital here, my patients were not so immediately under my inspection as I could have wished, neither had I the advantages in the treatment which an hospital would have afforded. However, I had not that great mortality which I was led to anticipate from the filth which in general prevails among the Irish peasantry, and from the crowded state of their dwellings, five or six individuals, with several pigs, &c., being congregated in a space scarcely ten feet square, all sleeping in the same bed, and in many instances with the sick person. As the thought just occurs to me, I would ask, might not the erysipelas, which accompanied the fever in Lisburn, have been caused by the crowded state and want of proper ventilation, which Dr. Kelso states as having existed, and which we too often find in country hospitals; it appears to me analogous to hospital gangrene, which we find the result of such a state as the above, viz. bad air and crowded wards; the analogy is still stronger where erysipelas terminates in suppuration and sloughing. The account of Dr. Kelso I think of very great interest to the profession at large on account of the rarity of such an attendant on fever. For my part, I cannot call to my recollection having either read of or seen such a complication, although having had an extensive field for observation, while attending, for better than two years, the practice of two large hospitals in Dublin, in which the fever patients daily averaged 50 or 60, during which period I have seen erysipelas in the same wards, and in the next bed to those labouring under typhus; yet in no one instance did I ever see a fever patient attacked with that disease, which, from its believed contagiousness, we might naturally have expected, where the proximity to the disease was so great.

The fever which prevailed here, although differing in other respects from that described by Dr. Kelso, assumed the malignant and epidemic form. In all cases I found there existed gastro-intestinal disease; in many there was also pneumonia, running rapidly into hepatisation of the lung. The pulse averaged from 120 to 140, generally incompressible. There was cough, of a very troublesome nature, at first unaccompanied with sputa, but afterwards copious expectoration followed the use of pectoral medicines. The cheeks were flushed and eyes suffused in a greater or less degree, according to the intensity of the cerebral symptoms. The skin was covered with petechiæ, sometimes assuming a dusky hue, and in fatal cases I found a tendency to purpura hæmorrhagica. The tongue and teeth were covered with a black sordes; the lips were dry and parched; thirst was excessive in those cases where gastro-enteritis existed. Pain of a very acute nature was found over the whole abdomen, particularly in the ileo-cæcal region; the belly became tympanitic generally on the third or fourth day; delirium of a violent nature was present in all fatal cases. There was great prostration of strength from the very onset of the attack, which required the administration of whiskey, either pure or diluted, camphor mixture, and other stimulants, to keep death as it were, at bay, which prostration I always looked on as indicating great danger, and very often death. Sloughing sores on the back and hips made their appearance in such cases of prostration early, and spread with a frightful rapidity; depending, as it were, on a want of due circulation in the system. Not having the benefit of careful and cleanly nurses, I lost a great number of those patients, except where I saw them early, and, as was my constant rule, inspected carefully every place where I saw there was the slightest pressure. I would here mention a line of treatment which I pursued in these cases, and which I invariably found attended with success; it was this, on the first appearance of any redness or abrasion of the skin, I coated the parts affected with successive layers of a table varnish (composed of camphor, spirits of lime, bee's-wax), allowing each layer to dry before applying the next; in this manner, after five or six coats, there was formed an artificial cuticle, which always prevented the spread of the inflammation. I do not intend to take on myself the originality of this treatment. I first learned its use and benefit while attending the lectures and clinical practice of Dr. Lendrick, in Sir P. Dun's Hospital. From the success which I found attending this remedy, I have no hesitation in recommend-

ing it strongly to the profession, at least to such as may not yet have either heard of it or employed it. The breath (in a case which I subjoin, and in which the patient laboured under pneumonia) was intolerable offensive, so much so, that it was quite disgusting at many feet from the bed, and for some time I suspected gangrene of the lung. Deafness was universally attendant on this epidemic, and was a marked symptom of disease going on in the brain or its membranes. As in the epidemic of 1835-6, there was no marked crisis, nor did any change manifest itself on those days which medical writers lay down as those on which we might expect a change, favourable or otherwise; in one or two instances, however, convalescence was manifest after a discharge of blood from the nostrils and rectum. As to the causes of the epidemic, I believe its origin was distinctly referrible to the variableness of the weather, together with the filthy habits of the peasantry, as this form of epidemic was peculiarly confined to the very lower classes. I give three of the most remarkable cases as an illustration of the general form which the disease assumed.

Case 1.—Henry Meagher, æt. 21.—Dec. 8th. Saw him to-day; says he has been ill a week; attributes his illness to cold, produced by a wetting. Was first attacked with pains in all his bones, back, and in the head. *Present symptoms.*—Face flushed; eyes suffused; tongue red at point and edges, greyish-white on surface; lips red; gums spongy and soft; pulse 130, soft; skin hot, with circumscribed petechiæ, especially on chest and abdomen; tympanitis not very remarkable; pain over the whole abdomen, but particularly in the ileo-cæcal region; thirst.—Six leeches behind the ears; *James's powder*, two grains, every hour. Cold lotions to the forehead; fomentations to legs; whey to drink.

10. Raved during the night; face much flushed; tongue bright-red at point and dorsum, rough and dry; lips and teeth covered with black sordes; skin more thickly covered with petechiæ; pulse 136, shabby; moderate subsultus; speaks thick; belly tympanitic; ileo-cæcal tenderness; insatiable thirst.—Head to be shaved.

Camphor mixture, one ounce, every third hour.
Carbonate of ammon., twelve grains;
James's powder, six grains;
Ipecac. powder, three grains;
Syrup, q.s. Make four pills; one every third hour. Six leeches to abdomen, and then a large poultice.

12. Pulse 120, soft and compressible; subsultus tendinum; face still flushed and eyes suffused, giving his face the appearance of a person intoxicated; lips covered with black sordes; gums soft and spongy; abdomen tympanitic, and thickly covered with petechiæ; tongue large, covered at point, dorsum, and edges, with a thick yellowish fur; back thickly covered with petechiæ. I ordered him—

Whiskey punch, eight ounces; half an ounce every second hour. Contin. remedies.

13. Pulse 108, small and feeble; tongue reddish-brown and dry in the centre, puts it out rather tremulously; body entirely covered with petechiæ; belly tympanitic; raved during the night.—Ordered him to continue the punch and the medicines.

14. Subsultus tendinum; pulse 100, soft, and compressible; tongue brown in centre, white at point and edges; countenance improved.—Repeat the punch.

James's powder, six grains;
Camphor, eight grains;
Carbon. of ammon., twelve grains;
Syrup, q.s. Make four pills; one every fourth hour. Stupe the legs and abdomen with turpentine.

15. Pulse 96; tongue still dry and brown, rough in centre; belly less tympanitic; subsultus; face less flushed; countenance improved.—Repeat medicines.

16. Pulse 80, with some degree of firmness; belly not tympanitic; tongue moist.—Omit pill.

Camphor mixture, one ounce, every third hour.

17. Tongue still dry and brown in centre, moist at point and edges; marked improvement.

18. Convalescent.

Case 2.—Thomas Dunphy, æt. 16, ill since Dec. 6th.—8th. Pulse 140, small, heat moderate; tongue greyish, white on dorsum, red at point and edges; lips red; face not flushed; dark livid circle round the eyes; anxious expression of face; sick, heavy breath; abdomen very tender on pressure; raved incessantly during the night. Head to be shaved, and the bowels not having been moved for several days, I ordered him a turpentine enema at once, and fomentations to the legs.

Calomel, three grains;
Scammony and jalap powder, four grains. To be taken at once. Cold lotion to forehead.
James's powder, two grains, every six hours.

9. Burning acrid heat of skin; countenance bespeaking great distress; livid circle round the eyes; legs kept continually drawn up towards the abdomen; pulse 140; abdomen hard and tympanitic; will only take cold water; cough very severe; passed a great quantity of solid fæces after the injection.—Repeat enema and fomentations.

Calomel, eight grains;
James's powder, twelve grains;
Ipecac. powder, three grains. Divide into four powders; one every third hour.

10. Pulse 140; abdomen not so hard, but still tympanitic; injections brought away a great quantity of solid fæces; tongue red at point and edges, and white on surface; hard, dry cough; continually moaning; keeps the legs constantly drawn up to the abdomen; eyes suffused; breath very offensive.—Repeat powders.

Barley decoction, eight ounces;
Castor oil, two ounces. Make an injection. Cold lotion to forehead.

11. The breath most intolerably offensive; pulse 140; has a most painful expression of countenance; abdomen hard; tongue thickly coated in the centre; bowels not moved yesterday morning.—Repeat enema.

Calomel, three grains;
James's powder, two grains. Take every third hour. Fomentations to the legs. Chicken-broth.

12. Breath still dreadfully offensive; black sordes on lips and teeth; face expressive of great anguish; still keeps his legs drawn up to the abdomen; continually asking for cold water, will not drink anything else.

13. Petechiæ appearing universally over the whole body; face flushed; suffering most acutely; black sordes, gluing the lips together; pulse 140; breath not much improved.—Repeat powder and fomentations.

16. No change worth mentioning till today, when petechiæ appeared less; pulse 146; breath still dreadfully offensive.—Saline draughts; repeat powder.

17. Pulse 130; general amendment; breath still continues intolerable; black sordes on the lips.—Continue medicines; honey and borax to be applied to the lips.

18. Tongue cleaning; pulse 110; bowels not being opened for two days, I ordered a turpentine enema in the evening.

19. Pulse 100; bowels freed; appetite returning; breath much improved; tongue moist, clean, except at the base; cough less, with copious expectoration.—Ordered him chicken-broth and two ounces of wine.

20. Convalescent.

Case 3.—Edward Morony, ill ten days. Dec. 10th. Illness began with headach, pains in his joints and back, brought on by a severe wetting; pulse 140, feeble; tongue thick, covered with a dry brown fur in centre, red at point and edges; cough; bronchial râles in the upper part of the right lung; petechiæ very abundant; belly tympanitic; skin dry and hot; great prostration of strength; insatiable thirst.—Purgative draught.

11. Pulse 138, feeble; tongue dry, covered with a black crust in centre; pupils contracted; raved incessantly through the night; bowels were freed by the purgative draught; passes all his evacuations involuntarily; chest and abdomen covered with petechiæ, circumscriptæ; insatiable thirst.

Calomel, eight grains;
James's powder, twelve grains;
Carbonate of ammon., twelve grains;
Camphor, twelve grains;
Syrup, q.s. Make six pills; one every fourth hour.
Camphor mixture, one ounce, every second hour.
Wine, half an ounce, in *water*, every second hour. Shave the head; cold lotion to forehead; fomentation to abdomen.

13. Pulse 136; raved incessantly during the night; bowels free; skin cold and clammy; petechiæ very abundant; is comatose, and does not recognise any one; has large sloughing sores on both hips and back to which I ordered a fomenting poultice.—Repeat wine and other remedies.

15. Pulse 130, weak, irregular, and imperceptible for some seconds; pupils contracted; skin cool and clammy; hurried and difficult respiration; passes all his evacuations under him.

Camphor mixture, one ounce, every hour.
Wine, one ounce, every second hour.
Sinapisms to feet; cold lotion to head.

17. Died this morning, at six o'clock.

As fever is our great antagonist in dispensary practice, I merely wish to lay before my fellow-labourers in this district my experience, and the success attendant upon the treatment I pursued, leaving it to themselves to choose what they may think advantageous, and reject what does not appear so to them.

ABSTRACT

OF THE

EVIDENCE OF DR. R. D. THOMSON,

RELATIVE TO THE

ADULTERATION OF DRUGS:

Delivered before the Select Committee of the House of Commons on the Poor-Law Amendment Act.

15533. Mr. Wakley.—Are many medical substances rendered useless in consequence of the defective manner in which they are prepared?—Extracts, from the nature of the process recommended in the Pharmacopœia, are very often useless, because the processes require very great attention.

15534. Through how many hands do medical substances pass before they generally reach the consumer?—Drugs are collected in the countries from which they derive their origin, by the natives of those countries; they are purchased by a merchant, who imports them into this country; this merchant employs a broker, who sends the drugs, if they are capable of being readily tested, to a scientific chemist. The medicines which fall more particularly under this head are saltpetre, sal ammoniac, and

other soluble substances; the wholesale druggist employs a broker, who examines the analysis, and purchases for him; the wholesale druggist then sorts the drugs; the purest kind he sells in their natural state, the second kind he reserves for powders, and the worst kind of all he reserves for tinctures; and this inferior kind very often is in a state of decomposition.

15536. Is there a business called drug-grinding?—With the exception of two houses in London, all the wholesale druggists send their drugs to be ground by drug-grinders.

15537. In what form do drugs, and the ordinary agents employed in medical practice, appear in the drug market?—As seeds, roots, leaves, gums, balsams, resins, and oils.

15538. In what forms are medicines generally administered, and in what state are they sold by the wholesale druggists?—They are either employed in the form of solution, in some menstruum, as in spirit and water, or in the solid form; most generally they require to be reduced to a state of powder.

15539. Are drugs invariably genuine when they are first exposed in the drug market?—Roots cannot be readily adulterated, although one case has been mentioned, in the continental journals, of the adulteration of jalap; pieces of jalap-root were joined together by means of paste, and they were soaked in tincture of jalap so as to give them the taste of the plant.

15540. CHAIRMAN.—Was it a jalap root?—Yes, but of an inferior description; when the drugs occur in masses, frauds are very often practised; opium often contains pieces of iron embedded in it; calomel, which is an indispensable preparation of mercury, used very extensively in medical practice, often consists of very little more than sulphate of barytes, which is an inert substance.

15541. Mr. WAKLEY.—Are you aware that white precipitate of mercury is often sold as calomel?—Yes, I have heard of that; it has never occurred in my personal observation; but the most remarkable adulteration is that of scammony, the resin obtained from a plant; the price offered by the druggists for it is so small that the foreign merchant is unable to supply it at that price.

15542. CHAIRMAN.—From what part does it come?—From the Mediterranean, from Syria; and for this purpose he mixes it with a quantity of extraneous matter. I have generally found an immense quantity of chalk; I will exhibit a specimen of it. [*The Witness exhibited the specimen.*] I may mention, that in this substance the active ingredient often varies from 8¼ per cent. to 81¼ per cent.; gamboge, which is a purgative very frequently employed, is in one variety said to be a manufactured article; milk of sulphur, as it occurs in commerce, contains one-half its weight of stucco, which is proved by exposing it to heat, the sulphur is then driven off, and the stucco remains behind. There are certain vegetable powders which are mixed with a certain quantity of extraneous matter by the drug-grinders, ostensibly for the purpose of clearing the mill, generally to the extent of 14 per cent., and those substances are aloes, gum arabic, capsicums, cubebs, uniforbium, guaiacum, storax. I am informed by a druggist who grinds his own drugs, that it is quite unnecessary to add any of those extraneous ingredients; Peruvian bark is often made by the drug-grinder of charcoal, Venetian red, Carthaginian bark, lignum vitæ and satin wood; this mixture was sold about 40 years ago by the Apothecaries Company, and it was also sent to the Army as Peruvian bark. A remarkable fact requires to be stated in reference to this mixture, that a druggist sent 20 chests of pure genuine bark to a drug-grinder; the drug-grinder laid aside 18 chests for himself; he ground the two chests, and he mixed the two chests up with 18 chests of extraneous matter, and sold the 18 genuine chests for his own private profit; a practical chemist would have very little difficulty in detecting this adulteration. Calamine, or carbonate of zinc, as it occurs in commerce, contains very little zinc at all; it consists principally of sulphate of barytes coloured with a little iron; this adulteration may be very readily detected by boiling the powder in a dilute acid; the zinc will be dissolved, and the sulphate of barytes will remain in a state of powder. Ginger is adulterated with 50 per cent. of capsicums, satin-wood, saw-dust, and flour, but the article sold for ginger often does not contain more than 30 per cent. of ginger. Jalap is adulterated with 28lbs. of barley-meal per cwt., and also with lignum vitæ dust; it is common to send 84lbs. of jalap to be made into a cwt. Liquorice powder is often made according to the following formula, and given as horse-powder; half cwt. of common sugar; one-and-a-half cwt. of barley-meal, and 7 lbs. of turmeric. Lac and plumbago are adulterated with coal. Opium, which is an indispensable remedy in medicine, is adulterated with extract of senna, to render it soft, and sometimes contains from 30 to 60 per cent. of water. Rhubarb is often made by the drug-grinder, of 14 lbs. of flour, 8 oz. of turmeric, and 98 lbs. of rhubarb; now this is considered a very good article, but it often contains not more than one-half its weight of rhubarb. Nitrate of silver, which is used extensively in medicine as a caustic, and is indispensable to the surgeon, is adulterated with nitrate of lead, and this to a very great extent; the adulteration, however, is very readily detected by dissolving the salt in water, and adding a few drops of sulphuric

acid; the lead is precipitated by the sulphuric acid in the form of a white powder, and the nitrate of silver remains in a solution. Tinctures are diluted with water. Those drugs which are sent to the drug-grinder are invariably of an inferior quality; the process of drug-grinding consists in drying the drug and then grinding it in a mill, similar to a flour-mill; the loss sustained by powders during those processes varies in each particular case, but it may be estimated at from six to 12 per cent., and yet, with one exception, all the drug-grinders of London send home their powders with a constant loss of four per cent. Jalap loses about eight per cent., so that as 84 lbs. of jalap are frequently sent to be made into a hundred weight, the adulteration would be about 36 lbs. per hundred-weight, that is, about one-third. In illustration of this may be mentioned, that jalap was recently offered to a druggist at the same price for which it might be bought in bond, 6*d.* per lb., by the agent of a drug-grinder.

15543. Mr. FRESHFIELD.—So that the adulteration must have been at least equal to the duty?—Yes; he was enabled to do this by keeping back a portion of the genuine article and adulterating the powder which he returned to the druggist who had supplied him with it; sometimes the adulteration of powders is carried to an enormous extent. One gentleman in the country, who had at one time been in the drug trade, but who has now retired, informed me that he had been offered any powder he pleased to order at 36*s.* per cwt., and when the person who made the offer was asked if the powders were genuine articles, he said they were the best he could give at that price; so that by diluting a powder the price may be brought down to satisfy the most stingy purchaser; the drug-grinder does not in all cases adulterate, but the druggist sometimes sends out the article in its natural state, mixed with a number of extraneous ingredients; the drug-grinder in this case also adulterates, so that very little of the genuine article ever reaches the consumer.

15544. Mr. WAKLEY.—Should you state that this adulteration generally takes place with the drug-grinders, and that you also fear with a great number of wholesale druggists?—Yes.

15545. And you are apprehensive that the evil is one of very great extent?—Yes, of very great extent.

15546. Mr. HODGES.—If those frauds are practised by the drug-grinder, what security has the public for the genuine nature of the drugs which are purchased at Apothecaries' Hall?—I am not aware whether Apothecaries' Hall employ drug-grinders or not; I think they do employ drug-grinders.

15547. Does that Company exert any particular inspection over the drug-grinders, so as to be answerable for the genuine nature of the drugs that they sell?—I am not aware.

15548. Then what possible security has the public, if the fact be as you have stated, for the genuineness of any drugs they buy at any druggists?—The only security they have is, before purchasing the drug, to subject it to the inspection of a practical or scientific chemist.

15549. Are the apothecaries who purchase those drugs from the chemists able to test the drugs that they buy?—They consider themselves judges only of roots and drugs, as they occur in the drug-market, barks, leaves, and those which I mentioned before, but they do not pretend at all to be able to test drugs by any chemical tests.

15550. Then it does not at all follow that a medical practitioner, who will give a liberal price for his drugs, is certain of having them at all more genuine than a man who goes into the market and gets them at the lowest price that he can?—If he employs a respectable druggist, and one who grinds his own drugs, if the moral character of that individual is good, I should say that he is sure to obtain the drugs in their genuine state.

15551. Mr. FRESHFIELD.—Are there eminent chemists who grind their own drugs?—I should not wish to mention names; but I am acquainted with those who do grind their own drugs.

15552. Mr. WAKLEY.—Do you consider that their doing so is the best foundation, in fact, the only effectual security for their being genuine?—Yes, for the genuineness of powders; I speak as to powders.

15553. Are you acquainted with many wholesale druggists in London?—No, not a great many.

15554. Or the mode in which they conduct their business?—I know the general mode in which they conduct their business.

15555. What number grind their own drugs?—Only two grind their own drugs, as far as my knowledge permits me to state.

15556. Have you, in the course of your inquiries, heard that inspections which are occasionally made by members of the Apothecaries' Company have induced them on some occasions to pronounce that the articles which they themselves had supplied were bad, and that they have thrown them into the street, and had them destroyed?—I have heard so.

15557. Mr. FRESHFIELD.—Though there are few druggists who grind their own drugs, is it not known that several of them are practical chemists, and are very likely to test their drugs before they sell them?—I am aware that those individuals who do grind their own drugs are scientific chemists.

15558. But besides those who do grind their own drugs, is it not known that several of the others are scientific chemists?—Yes; I speak of the wholesale druggists; the

retail druggists are supplied by the wholesale with drugs generally.

15559. Mr. LIDDELL.—Is it ever the practice with the vendors of drugs to have a double assortment of drugs, and to supply the rich with a better quality of drugs; and the poorer with an inferior quality?—Only so far as price is concerned.

15560. CHAIRMAN.—Do you believe that the drugs adulterated in the manner you describe are generally sold to the medical practitioners in the country?—I believe so; that many of them are sold.

15561. You believe that the drugs generally administered to the patients of medical practitioners in the country are adulterated to the extent that you describe?—I believe that many drugs are adulterated to the extent I have described; and that you have no security for their not being adulterated, unless you employ those druggists who grind their own drugs.

15562. Have not the medical men some means, by testing or otherwise, of ascertaining whether the drugs are or are not adulterated?—I believe that it is necessary that a man should be intimately acquainted with the science of chemistry to detect these adulterations.

15563. Do you believe that a medical man, having the ordinary education provided for medical men in this country, has or has not the means of detecting whether the drugs are adulterated?—I believe many medical men, who have paid attention to chemistry, may have such knowledge as to enable them to test many of the drugs.

15564. Do you, from your knowledge of the profession, believe that the medical men practising in this country have or have not the requisite knowledge to enable them to ascertain whether the drugs are adulterated or not?—I believe the education they receive is not calculated to direct their attention to the subject of chemistry sufficiently for them to possess that knowledge.

15565. Then you believe the education and attainments of the medical men generally practising in this country to be such as to make them unable to distinguish genuine from adulterated drugs?—I believe, so far as a chemical education is prescribed by the different boards, that medical men are not likely to possess that knowledge.

15566. But, without referring at this moment to any course of education that may be prescribed by any boards that may exist, what I wish to know is, whether, from your acquaintance with the medical profession, you believe medical men generally to be in a capacity to distinguish genuine from adulterated drugs?—I believe they are not.

15567. You believe, therefore, that they are liable to be imposed upon by the persons from whom they purchase those drugs?—They certainly are liable.

15568. Do you believe generally that they are imposed upon?—To a certain extent.

15569. Do you believe those drugs to be generally and commonly sold as the drugs which are administered by the medical men practising in the country?—Several of those powders, to my knowledge, are administered by medical men without their knowledge of the adulteration.

15570. Do you believe that drugs adulterated in the manner which you have described are administered to any particular class of society exclusively, or to one class more than another?—Inasmuch as price is one of the tests by which medicines are too often purchased, the poor will be more liable than others to be supplied with bad remedies.

15571. You have said that the education and attainments of the medical profession of this country generally, do not enable them to distinguish genuine from adulterated drugs?—I have; I mean the education prescribed, as regards chemistry.

15572. Am I correct in supposing you to have stated that the attainments generally possessed by the medical men in this country are such as not to enable them to distinguish genuine from adulterated drugs?—Yes; I speak from my own knowledge.

15573. You have said that, inasmuch as the price of drugs must enter into the calculations of persons who administer them, you think that the labouring classes, being less capable of paying higher price, may be more exposed to the administration of bad drugs?—Yes.

15574. Do you believe then that the medical men purchase two descriptions of drugs, one for the poorer and the other for their richer patients?—I believe that medical men, from the great competition which exists, are likely to purchase the cheapest drugs they can find.

15575. Do you believe that the medical practitioners of the country are generally in the habit of purchasing two descriptions of drugs, one cheap and the other of a dearer description, and that they administer the cheaper description to the poor, and the dearer description to their richer patients?—No, I do not.

15584. Mr. FRESHFIELD.—Is it not notorious that the same article by name may be bought at various prices?—Yes, if you go to a man who is not to be depended upon.

15585. Do you happen to know whether it is the practice to sell drugs cheaper, which are understood to be charity drugs, to be given to the poor?—No, I do not.

15586. Mr. WAKLEY.—You are yourself a physician to a dispensary?—Yes.

15587. As physician to that dispensary, are you in the habit of prescribing the costly medicines which are given by medical practitioners to their patients in the higher classes of society?—The medical

officers in our dispensary are in the habit of supplying many of the drugs from their own pocket, so that I have used many of my own preparations without charging for them.

15588. Mr. LIDDELL.—In a serious and critical case, would you hesitate to give the best drugs that that case required?—Certainly not.

15589. Would you think, in ninety-nine cases out of a hundred, supposing the case were a serious and critical case, the medical man would not give the best drugs that were within his reach?—I cannot pretend to give a general opinion with regard to all medical men, but I know that a great many would do so, as far as my own observation goes.

15590. Mr. WAKLEY.—Do you think it to be a natural inference, that if medical officers holding public situations are paid inadequate sums for the discharge of their duties, they should be driven to an inferior drug market?—It is very probable.

*** We have printed the evidence of Dr. Thomson, as matter preparatory to some remarks which we propose to make on the important question of the adulteration of medicines.—ED. L.

On Granular Degeneration of the Kidneys, and its connections with Dropsy, Inflammations, and other Diseases. By ROBERT CHRISTISON, M.D., F.R.S.E., &c. &c. Edinburgh, 1839. 8vo. pp. 288.

THE distinguished Professor of Edinburgh has here given us a very excellent digest of his experience respecting the peculiar disease of the kidneys originally described by Dr. Bright. The work is composed on a comprehensive plan, being divided into six sections, wherein the pathology and morbid appearances; the symptoms and history; the complications, causes, prognosis and treatment of the affection, are successively made the subjects of inquiry; an appendix of cases is added by which some of the leading doctrines previously laid down are usefully illustrated. We proceed to notice some of the most striking points in these several divisions.

We must remark, *in limine*, that the title adopted by Dr. Christison is, perhaps, the very worst that has yet been proposed, for it involves a completely erroneous view of the anatomical nature of the disease; we really think that, as he himself admits it to be indefensible, he would have shown more wisdom, had he set aside the extraordinary delicacy of feeling whereby he seems to have been guided, and "*taken the liberty* of naming the malady after Dr. Bright." But we have no space for a discussion on nomenclature, and hasten at once to more important matter.

As the reader is aware, the morbid changes occurring in the kidney in this disease were originally referred, by Dr. Bright, to three forms, a number which has since been increased to five, by M. Martin Solon, and to six, by M. Rayer. Dr. Christison doubts whether all these forms are really—as it has been assumed they are—successive developments of one and the same primary morbid state; grounding his doubt on the diametrically opposed anatomical characters of some of those forms, and the coexistence of each of them with the same amount of suppression of the solids of the urine, and the same extent of disorganisation of the healthy structure of the kidneys. This reasoning is plausible, and is certainly supported by the fact that the French authors named have by no means succeeded in making out the conditions of sequence of their numerous stages. Our author, therefore, considers it better, in tracing the progress of the disease, to be guided by the destruction of the healthy structure, than by the morbid deposit. This mode of considering the subject leads to the establishment of three stages: an *incipient*, which is in some instances, if not in all, characterised by congestion or reaction; a *middle*, distinguished by a total or nearly total destruction of the cortical substance; and an *advanced*, wherein the tubuli also are extensively or even completely obliterated.

Respecting the nature of the early stage of Bright's disease, no little uncertainty has hitherto prevailed; and we are pleased to find that Dr. Christison, in giving his sanction, within certain limits, to the doctrine of the French pathologists, because confirmed by his own observation, pronounces himself in a less undecided tone on the subject than his English cotemporaries. The malady may primitively be either acute or chronic in its type. Now, in those cases (so far they have been rarely met with) in which the disease proves fatal, while yet possessing the characters of an acute affection (and in such alone, as is manifest, could the real anatomical outset

of the disease be ascertained), nothing has been discovered except the evidence of a state of active hyperæmia, bordering on, if not actually amounting to, inflammation. These evidences are—and, indeed, it seems idle to contest their inflammatory nature—enlargement of the organ generally, but especially of the cortical substance and dark-brown colour, flabbiness and friability of both tissues dependent on sanguineous engorgement; externally the organ is studded with stellate points of ecchymosis. But when the disease wears from the first a chronic character, Dr. Christison considers it likely that change of structure goes on insidiously, *ab origine*, and that this change "consists of a minor degree of greyish-yellow matter in the cortical substance, with, or possibly without, some degree of sanguineous congestion." The coexistence of commencing yellowish degeneration and congestion has been observed by himself and by M. Solon; but this combination is, by the latter gentleman, made to constitute the second stage of the malady, which, as it appears to us, is a more correct arrangement than that of our author. It is, we are aware, still made a question by some whether hyperæmia be invariably the primitive morbid condition; but it seems necessary to admit it to be so, inasmuch as in all cases where the event has permitted an early examination, the appearances have been of the kind above described.

But there is another, and a very debateable point, assumed by M. Solon, namely, that the congestive condition is, from the first, *sui generis*; that the hyperæmia of a kidney destined to become the seat of the lesions described by Dr. Bright differs from that produced by ordinary inflammatory action—from that of simple acute nephritis in short. Here we are of opinion M. Solon is unsupported by facts. Let any one consult the anatomical descriptions of acute nephritis in M. Rayer's recent volume, or compare the figures representing the acute stage of the two disorders in its accompanying plates, and he will be convinced that no substantial difference is traceable between the earliest anatomical characters of the two affections. The evidence of symptoms is to a similar effect; for if œdema be usually an attendant from the first, on Bright's disease, it is not always so; and the discharge of albuminous urine, though made by M. Rayer the ground of his title for the disease (albuminous nephritis), is by no means peculiar thereto, as it is met with in simple acute nephritis both before and after the establishment of suppuration. It is true that some distinctive characters of the urine in these affections have been described by M. Rayer; but we confess we are not disposed to place much confidence in them; the relative quantity of albumen discharged is the most remarkable among them, and even this is subject to extreme variation. On the whole, it is difficult to detect any difference between the symptoms of acute simple nephritis, as given by the French writer, and those of the acute form of Bright's disease, as enumerated by Dr. Christison.

The latter observer has supplied us with no novel results respecting the anatomical characters of the more advanced stages of the disease; they are described in the present volume as they are described elsewhere; and no attempt is made to trace the connection, if such exist, between the primitive morbid state and the various lesions met with in the kidneys of individuals who had long lingered under the symptoms of Bright's disease.

We have derived almost unmingled gratification from the perusal of our author's very masterly sketch of the symptoms, and shall endeavour to notice, with as much brevity as possible, some of its more important points.

The acute form is marked by chilliness or rigors; feverish reaction and its usual attendants; scanty discharge of urine (the secretion is sometimes altogether suppressed, an occurrence of almost invariably fatal import) which is highly albuminous, tinged with blood or actually mixed with coagula; micturition; pain in the loins, and frequent sickness and vomiting. These symptoms seldom last more than two days without the supervention of some secondary affections, of which the most common are dropsy of the limbs and face, coma and serous inflammation. The latter complications may prove fatal in a few days, or the original disease may be checked altogether by treatment, or—and this is the most common result—it lapses into the chronic state.

But the disease is, in the majority of cases, chronic from the outset, and herein resembling a variety of other organic maladies, may pursue a latent course for a long period of time. Upon this condition of the

disorder Dr. Christison dwells at some length; and all practitioners who have had much experience of its insidious progress will subscribe to the soundness of his main position,—that of the numerous symptoms and signs to which it may give rise, none are invariable in their occurrence except a morbid state of the blood and urine. The practical inference from this fact is self-evident. But he evidently lays too much stress on the circumstance of an individual "being regularly awakened once or oftener in the night-time to pass his urine," as indicating "the commencement of the disease." That it may have this diagnostic force in some instances we do not mean to contest, for we confess we have not paid particular attention to the symptom in question in examining patients affected with Bright's disease; but we affirm that any one who from its occurrence invariably predicates the existence of that disease will frequently commit a serious blunder. We have at this moment a case of stricture of the urethra under our care, the subject of which regularly suffers from this troublesome symptom during the cold season of every year; yet his urine contains not a particle of albumen and is otherwise natural; and though he occasionally feels an uneasy sensation in the renal organs, when the urine is passed with much difficulty, he enjoys in every other respect the soundest health. Such facts must be familiar to every member of the profession.

An inquiry into the exact conditions of the urine and of the blood next occupies upwards of forty pages of the volume. The modifications of the urinary excretion vary considerably at different periods of the disease, a point which the reader will find clearly demonstrated by Dr. Christison, while its bearing on the prognosis and treatment is ingeniously exhibited. The pathognomonic characters in the early stage are "a reduction, but only a moderate reduction of density, a strong albuminous impregnation, and a material diminution of the daily discharge of solid ingredients." On the symptomatic value of variations of density our author is, perhaps, inclined to exaggeration; the accidental causes influencing this quality are as numerous as their effects are difficult to be estimated with accuracy,—a circumstance which must render its general practical utility a matter of doubt, whenever the variation is inconsiderable. The uncertainty of physiologists respecting the mean specific gravity of health is a further stumbling-block; that adopted by Dr. Christison, 1024—1025, is, according to the testimony of almost every writer on the subject, considerably too high.

We regret that our limited space prevents us from accompanying our author through his discussion on the share of importance to be attached to the presence of albumen in the urine as diagnostic of Bright's disease. We have, in a former article (LANCET, Vol. II., 1836-7, p. 447), where we introduced the labours of M. Solon to the notice of the profession in this country, exposed at some length the doctrine of that sagacious observer respecting the occurrence of albuminuria towards the crisis of acute diseases, and this is one of the most important contributions on the subject that have yet been made public. We shall here, then, simply record our author's final conclusion, which we are the more anxious to do as a false impression regarding his opinion on the question is generally entertained:—"It is incorrect to hold, as some do, that albuminous urine is pathognomonic or, by itself, characteristic of granular disorganisation of the kidneys."—p. 37. With this proposition we cordially agree; indeed, we are of opinion that a perfectly impartial view of facts warrants a still stronger style of expression; we are firmly persuaded, and the book before us justifies our persuasion, that the practitioner who trusts for his diagnosis not alone to the existence of albuminuria, but even to all the other abnormal conditions of the urine united, will occasionally find that he has judged on imperfect evidence.

In the advanced stages of the disorder the characters of the urine change. The quantity discharged is often about natural (unless when accidental causes interfere with the ordinary course of things); it ranges frequently above the healthy standard; but total, or almost total, suppression, gradually induced, occasionally precedes the fatal result. The colour is ordinarily pale, and if deep, this tint usually disappears after the coagulation of the albumen, in consequence of the precipitation of the hæmatosine. The density is now invariably reduced, and to such an extent as leaves no doubt of its morbid character, Dr. Christison having found it so low as 1004; the proportion of solids is of course decreased. This observer's statements respecting the relative

quantity of albumen are at variance with those put forward by others; they are to the effect that the quantity of this principle is commonly much less than in the early stages, though it may occasionally, on the recurrence of acute symptoms, become as abundant as previously. Now the general inference from the works of Bright, Osborne, and Solon is, that the proportion of albumen regularly increases as the disease advances. Dr. Osborne, whose enthusiasm in upholding the various opinions he has espoused is very remarkable, expressly states that "the extent of disease discovered after death has been in every instance in proportion to the degree of coagulation." Many reasons, too numerous to rehearse here, in addition to our own experience, induce us to agree with Dr. Christison.

Our author's remarks on the blood are most interesting, and, as he succeeds in showing, eminently practical in their applications. Here, as in the instance of the urine, the peculiar characters of the fluid vary with the period of the complaint; in the early stage it is remarkable for "the low density of its serum, and a defective proportion of albumen, for the frequent presence of urea, for the frequent increase of the fibrine, and by the proportion of the hæmatosine being unaffected."

The discovery of urea in the blood in this disease was first, but imperfectly, made by Dr. Bostock: to Professor Christison we are indebted for the clear and incontestable proofs of its existence therein. This principle is, as he states, "invariably found in the urine at all stages of the disease, *when the daily discharge of it by the urine is diminished materially.*" The want of due attention to this proviso has in all probability been the cause of the unsuccessful issue of certain attempts made in different quarters for its detection. We perceive that our author still considers "effervescence (of the spirituous and watery extract under nitric acid) attended with the peculiar odour which accompanies the action of the acid upon this animal principle, as it exists in urine," conclusive of the presence of urea in the blood. The fallacy of this urinous smell as a test of the presence of urea was, however, very clearly exhibited some time since by Brett and Bird ("Med. Gaz." xii, 494, &c.): the justness of their strictures in respect of this point will not be questioned by any one who takes the trouble to repeat their experiments. It were to be wished that observers would in future push their investigations further than they habitually do, and, in imitation of MM. Prévost and Dumas, separate the urea from the nitric acid with which it is made to combine in the course of analysis.

In the advanced stage of the complaint "the proportion of hæmatosine in the blood is invariably and greatly reduced (hence the leucophlegmatic complexion of subjects so affected); no other morbid change is invariably occasioned, but frequently the solids of the serum are also defective; sometimes, on the contrary, in excess; and not unfrequently, especially if the disorder is very far advanced, the serum likewise contains urea." With this brief extract, which recapitulates the contents of many pages, we must close our examination of this section of the book, not, however, without introducing to the reader's study the valuable directions it contains respecting the analytical processes to be pursued in these cases.

Our author continues with an elaborate description of the "secondary diseases" (disorders would have been a more correct term) incidental to the malady under consideration; these are dropsy, diarrhœa, pleurisy, peritonitis, pneumonia, catarrh, dyspepsia, chronic vomiting, rheumatism, diseases of the heart and liver. In thus excluding dropsy of the cellular membrane from the number of essential consequences of renal disorganisation Dr. Christison is, perhaps, right; but the chief ground on which he does this,—the absence of anasarca from first to last in some extremely rare cases—will, if carried out, marvellously reduce the catalogue of essential symptoms of organic diseases in general. In illustration of our meaning let us instance the case of softening of the brain; assuredly some lesion of sensibility, motility, or intelligence is justly considered, in the pathological language of the present day, an essential product of that morbid state; yet cases of that disease are on record where no single cerebral symptom appeared during the course of a long life.

Dr. Christison's chapter on causes is little more than an echo of his own previous statements on the subject, and of those of other writers; this is tantamount to saying that—as he admits is the case—the positive information it contains is meagre. We can assure him that it is not by ascertaining how

often any complaint "*is ascribed by patients*" to this or that cause, he will ever materially advance our scientific knowledge of the etiology of disease.

The section on prognosis embraces inquiries into three most interesting points: the chance of recovery from the fundamental disease; the probability of recovery from its secondary disorders; the nature of the symptoms indicating amendment, or, on the contrary, particular danger. Dr. Christison wisely avoids, for the present, any positive assertion respecting the first of these; yet he is evidently disposed to believe that in really recent cases the disease has sometimes been entirely removed. This he infers from the condition of the urine and other symptoms, and "from the patient's never having returned to the hospital, though cautioned and urged to do so on the earliest reappearance of any illness." Now, we do not deny the possibility of complete recovery (the fact is that there is no conclusive evidence on one side or the other), but we would remind the reader, in respect of the last argument, that some individuals have returned to hospitals with every one of their old symptoms, though the *Io triumphe* for the restoration of their kidneys to healthy estate had during their "temporary absence" been sung in not a few *ex cathedrâ* discourses. The disease had in them been "scotched, not killed," and that the same has been the case in many other instances is rendered probable by the notorious fact, that the generality of the lower orders are unwilling to return to an hospital with ailments for which they had on a previous occasion obtained inefficient relief. Persons who look on every degree of albuminaria as indicative of Bright's disease, will, of course, enjoy the satisfaction of curing that affection in multitudes of cases. Dr. Christison falls somewhat into their error in emphatically citing the recovery of patients from anasarca after scarlatina; it is by no means proved that the kidneys are *specially* diseased, or indeed diseased at all, in every such case.

We perfectly agree with the author in thinking that "even where the disease has reached a pretty advanced stage in its progress" life may be prolonged, and this with a certain share of comfort to the patient, by proper therapeutical and hygienic treatment. We know of no better guide to this treatment than the pages of this volume, and regret that we must content ourselves with this mere reference to their character.

The cases reported in the appendix are of a better order than those usually published in this country, but are far from being perfect: their details are often insufficient: few of them are so drawn up as to convince the reader that due labour was bestowed on the investigation of each point alluded to; and the anatomical descriptions—except in the instance of the kidneys themselves—are materially defective.

We cannot close this article without expressing some regret at the unnecessarily pompous style which Dr. Christison has thought fit to adopt: surely such phrases as these—and there are many such—"the euphonious elegance of M. Solon's designation will not altogether atone for the philosophical error of naming a disease from one of its symptoms, &c.," are quite out of place in a work on a medical subject.

A Practical Treatise on Fractures; illustrated with sixty wood-cuts. By Edward F. Lonsdale, Surgeon, &c. &c. Churchill, 1838.

It would not be dealing fairly with this work did we view it as an epitome of the author's personal experience. Mr. Lonsdale has filled the office of house-surgeon to one of the metropolitan hospitals, and is now engaged in performing the duties of a demonstrator of anatomy, both of which evince a degree of industry on his part, in the prosecution of surgical knowledge, which, if followed up, may in time lay a foundation for future professional distinction; but neither his having filled the one, nor his being now engaged in the other, should authorise Mr. Lonsdale to assume the position of an oracle on fractures, as he has done, without, at least, having the modesty to acknowledge, by note, comment, or introductory remark, the many obligations which he is under to other sources besides his own very limited experience. Sir Astley Cooper, ere he ventured to give to the profession his "Treatise on Fractures and Dislocations," did not rest content with the vast opportunities afforded him for many years in the large hospital to which he was attached, as well as in his private practice, but anxiously gathered information from every nook in the provinces, and embodied the results in his great

work with thankful acknowledgments for the valuable aid which he, in this way, received. His Treatise contained but few strictures on the labours of those who went before him in the same field, and even when such criticism did occur, it was made in the true spirit of philosophical research, and was free from the semblance of egotism. The very index of Mr. Lonsdale's Treatise bears evidence of the spirit which pervades his work, such, for instance, as the following:—"Opinion of Sir Astley Cooper."—"Mr. Amesbury's opinion."—"Mr. Earle's opinion."—"M. Dupuytren's opinion."—"True explanation."—"Sir A. Cooper's and Mr. Amesbury's method."—"Dupuytren's method.—Objections."—"The author's method."—"Mr. Neville's splint."—"Mr. Liston's splint."—"The author's splint," &c. &c. Now all this is excellent to look at in print, but, as we have already hinted, it requires that Mr. Lonsdale should add to his life some more years of experience and judgment before he enters the arena with men who have not ventured to add their mite to practical surgery without deep reflection and a thankful acknowledgment for past and present obligations.

Were the human frame to be merely considered as a passive organ of locomotion, subject, for instance, to the forces which operate on chairs, tables, and such other contrivances of human invention, the value of Mr. Lonsdale's work would be great, but it unfortunately happens, both for our author and ourselves, that such is not the case.

Splints, bandages, springs, screws, and cushions, are Mr. Lonsdale's forte; in the application of these he is excellence itself; not so, however, with matters of more serious import; his observations on the powers of the muscles in producing fractures, or of those active organs of locomotion in offering opposition to their reduction, are few and insignificant; his definition of a compound fracture is incorrect; and he enters most superficially into those many complications attending fractures, which, after all, should be the essence of so recent and so long a treatise as the one now before us. At page 10, our author, in speaking of the causes, symptoms, and treatment of fractures generally, says, "The different offices which the bones have to perform cause some of them to be fractured more frequently than others, owing to the situation of some exposing them more to injury." This is strange logic. If the offices certain bones perform be causes of those bones being oftener fractured than others, how can such accidents be "owing to the situation of some exposing them more to injury"? Mr. Lonsdale illustrates this position by reference to the comparative frequency of fractures of the bones of the forearm, "for the upper extremities are brought more frequently into use, whether it be in the various occupations of life, or to protect the body from external violence, either in the act of falling forward, or to guard against blows with which it may be threatened." On referring to our author's "Table of the Comparative Frequency of Fractures in the Different Bones," we find the clavicle to be the bone of the upper extremity oftenest fractured; and even comparing the two bones of the forearm with the two bones of the leg, including, of course, with the latter, the patella, we do not find the fractures of the former to have very much predominated over the latter; thus, in six years, the fractures of the forearm are stated as 386, and of the leg and its patella 318; and whilst we have 118 fractures of the humerus we have as many as 181 fractures of the femur.

Mr. Lonsdale attaches too much importance to mechanical violence, such as blows, falls, &c., in producing fractures, and too little importance to the actions of the various muscles. Every tyro is familiar with the experiment of letting a subject fall from a considerable height without a fracture of any bone being the result, and the reasons why drunken men and women carry their bones home without injury, are as well known.

The table we have already alluded to should have pointed out, even to Mr. Lonsdale's mechanical spirit, the true causes of certain bones being fractured more frequently than others, viz., function and muscular action. He would then have seen why the clavicle is oftener fractured than the radius, the radius than the ulna, &c. But this was hardly to be expected, for, upon turning to the chapter on fracture of the clavicle, we find it stated that the reason why this bone is fractured more frequently at its centre than at either extremity is to be looked for in its shape and structure. "The sternal or scapular ends are comparatively seldom broken; for these parts of the

bone are of a different shape and structure, being thicker and more spongy. The scapular end, however, is more frequently fractured than the sternal, for it is flatter and broader, and very liable to yield by a force directly applied to it; while it is more subject to dislocation than the scapular end, owing to its ligaments being comparatively weaker." Mr. Lonsdale has altogether lost sight of the situation of the clavicle as regards muscular attachment in predisposing to fracture of its centre. When it is considered that four principle muscles, viz., *the great pectoral* and the *deltoid*, below, and the *sterno-mastoid* and *trapezius*, above, are connected with this bone; and moreover, that the corresponding edges of these muscles approach and sometimes touch each other at its centre, thus leaving a small portion of the bone unoccupied by muscular attachment, it is clear that in addition to external force applied directly or indirectly to the bone, the violent action of those muscles operating thus favourably towards its centre, must be powerful agents in producing its fracture. Neither can we agree with our author in attributing the frequency of fracture of the scapular end of the clavicle in comparison with its sternal end, to the one being flatter and broader, and the other rounder and thicker; the true cause is, that one end, from its situation, is more subjected to the mechanical forces which produce fractures than the other; and Mr. Lonsdale is decidedly wrong when he asserts that the sternal end of the bone is more liable to dislocation than the scapular, and consequently his physiological reasoning on this assumption goes for nothing. At page 21, Mr. Lonsdale says:—"In old age two reasons combine to cause the frequency of fracture; the one is the infirmity that generally accompanies it, rendering old people more liable to falls, at the same time that they fall with more weight, the limbs having lost the elasticity they possess in youth; the bones also possess more brittleness, from the smaller quantity of animal matter contained in them." Now, although the bones of old people will not resist the same violence as those of young when both have been macerated and dried, yet it is not the fact that fractures occur more *frequently* in the old. These accidents occur more frequently in the vigour of life, when the muscles are powerful, and are constantly being called into energetic action. But although Mr. Lonsdale admits, a little farther on, that "another predisposing cause to fracture is inordinate power in the muscles; yet," he continues, "I am aware that this circumstance is almost always accompanied with an increased degree of strength in the bone itself." We are not at all aware of this; we have repeatedly seen the most powerful muscular development in company with weak bones, and, on the contrary, the largest and strongest bones with but feeble active organs of locomotion; nor is our author a whit more correct when he states that the reason "fracture of the patella never takes place in very young people is the absence of muscular power sufficient to break the bone;" it is the absence of the *bony* patella.

The correct definition of a compound fracture is not that which we find at page 86 of Mr. Lonsdale's book:—"A fracture is said to be compound when it is accompanied by a wound of the soft parts round the bone which communicates externally with the air;" but we leave Mr. Lonsdale to correct himself, for in the next sentence he adds, "A simple wound of the integuments and muscles, however, does not constitute a compound fracture, without it *leads* down to the fractured *ends* themselves." Notwithstanding, we cannot speak in unqualified terms of Mr. Lonsdale's treatise, yet, in the application of all kinds of mechanical remedies to fractures, it is perfect.

ROYAL MEDICO-CHIRURGICAL SOCIETY.

Tuesday, February 12th, 1839.

DR. BRIGHT, President.

A CASE OF FRACTURE OF THE CORACOID PROCESS OF THE SCAPULA, WITH PARTIAL DISLOCATION OF THE HUMERUS FORWARDS AND FRACTURE OF THE ACROMION PROCESS AND OF THE CLAVICLE.

By J. F. SOUTH, *Assistant-Surgeon to St. Thomas's Hospital.*

THE author is induced to lay this case before the Society, as, from being verified by dissection, it is adequate to remove the doubts which have been entertained of the occurrence of such an accident as fracture of the coracoid process. The author saw the patient about an hour after he had fallen from a scaffold 30 feet high. In addition to the injury to the shoulder, he had a wound

over the coronal suture, with surrounding contusion, but no evidence of fracture or injury to the brain, though blood streamed freely from the left ear. There was also extensive injury to the elbow-joint, with fracture of the olecranon. From a careful examination of the shoulder-joint, the author was led to the conclusion that there was a dislocation of the humerus under the clavicle of the same kind, though not to the same extent as the so-called dislocation under the pectoral muscle. The dislocated head of the humerus was replaced by lifting the neck outwards with the thumb and rotating the arm, and its replacement was indicated by a grating sound. After five days, the patient having died from his several injuries, the author had an opportunity of examining the shoulder, of the appearances of which he gives the following account:—"On turning off the integuments a small quantity of effused blood was found in the front of the shoulder, and to my surprise a fracture of the clavicle, about a third of its length from the acromial extremity with, however, but little displacement."—"The acromion was broken at the usual place, about an inch from its extremity, but not at all displaced, as the periosteum had not been lacerated. The coracoid process was found broken, about half an inch from its tip, into two unequal pieces, the smaller of which remained connected above with a piece of the triangular ligament still attached to the acromion, and below to the short head of the biceps muscle, which had pulled it down as far as the ligament would allow. This muscle was torn from the coraco-brachialis about an inch, and to the top of the conjoined tendon of the latter and of the lesser pectoral muscle, was attached the larger portion of the broken coracoid process." The author, in conclusion, makes some observations on the partial dislocation of the humerus, which he conceives can take place only in conjunction with fracture of the coracoid process.

Mr. Gregory Smith inquired if there was any attempt at union of the acromion process in the case related by Mr. South; in some cases he (Mr. Smith) had examined after death, there had been, apparently, some attempts at union, but it was merely of a fibro-ligamentous character.

Mr. South said, that his patient lived only five days; no marks of union could, therefore, be expected. Regarding fracture of the coracoid process, he believed the accident was considered rare. He had himself seen only two other cases of this injury. In addition to these, however, two other instances had come to his knowledge, one of which was under the care of Mr. Bransby Cooper, in Guy's Hospital. He (Mr. S.) was not aware of the dissection of any such case; he was, however, inclined to believe that the accident was much more frequent than was commonly thought, and that many fractures supposed to be those of the tubercle of the humerus, were, in point of fact, fractures of the coracoid process. The symptoms of the accident attending the two cases to which he had referred, as having come under his own observation were by no means well marked. The shoulder maintained its usual form, but on placing the hand over the joint and rotating the arm a distinct crepitus was detected, and the coracoid process moved about under the fingers. He had doubted, until the occurrence of this accident, the possibility of there being a partial dislocation of the head of the humerus from the glenoid cavity. A case had since occurred in St. Thomas's which also proved that this accident could take place. A woman was admitted with what was called "dislocation of the shoulder," which had occurred three or four weeks previously. The roundness of the shoulder-joint still existed, the elbow was close to the side; the arm could be raised on a plane nearly level with the acromion process; rotation was perfectly performed, but when the arm was elevated the latter movement could be effected inwards only to a certain point, which was not to more than one-fourth of the whole extent of the natural movement; when a greater extent of rotation was attempted much pain was produced, as was also a grating against the coracoid process. Attempts at reducing the dislocation had been tried and persevered in on several occasions, by making extension downwards, and placing the knee in the axilla, but no beneficial result followed.

Mr. Charles Hawkins had seen a case in St. George's Hospital, which Sir B. Brodie said was a partial dislocation of the head of the humerus. The arm could be moved in several directions. Extension was made downwards and forwards, with counter-extension from the arm-pit with a towel, and the injury was reduced in two or three minutes.

Mr. Gregory Smith inquired whether any member had seen a case in which the tendon of the long head of the biceps was ruptured, or torn from its attachment, as he had seen in the dissecting-room as many as three or four illustrations of this accident.

AN ACCOUNT OF A FŒTUS OF SEVEN MONTHS WITH ITS PLACENTA ADHERENT TO A NÆVUS OCCUPYING THE SCALP AND DURA MATER.

By Robert Lee, *M.D., F.R.S.*

The fœtus whose malformation forms the subject of the present memoir, was sent to the author by Mr. William Highmore, of Sherborne. Immediately on its arrival in London a drawing was made of the malformed head by Mr. Perry, which was presented to the Society in illustration of the description contained in the paper. The vessels of the fœtus and placenta having

been minutely injected, the integuments of the head were divided from ear to ear, and the dura mater was found in immediate contact with the skin, all the bones of the vault of the cranium being wanting. The scalp and dura mater on the upper part of the head were almost wholly occupied by a great plexus of dilated arteries and veins filled with injection closely resembling nævus. The brain and its immediate envelopes were healthy. The placenta was united to the forehead by a band three-quarters of an inch in breadth, and an inch and a half in length, composed of amnion and chorion. Into this band the membranes of the brain were protruded through an opening as large as a finger's point. Although the author feels it to be impossible to fix exactly the period when the adhesion of the placenta to the head of the fœtus took place; he thinks it probable that the umbilical cord and band must have been formed about the same time, and at a very early period of the ovum, when the amnion and embryo were in contact, and before the end of the fifth week from the time of conception. The paper concludes with the recital of some of the more remarkable cases which have been recorded of adhesion of the placenta to the head and body of the fœtus.

Dr. Robert Lee observed that Dr. Simpson, in a learned paper on the subject, had attributed the union of the placenta in this kind of cases, to inflammation, but it was quite clear, from the nature of the union in this case, that it could not have been effected by this process. The adhesion must have taken place during the growth of the amnion and chorion, at a very early period, and perhaps before the ovum had passed into the uterus.

Mr. Perry had understood from Dr. Lee that this case would throw some light on the subject of amputation in utero. The fœtus had lost one or two fingers by this process, and others seemed partially amputated.

Dr. Lee said that the fingers were simply deficient, and that no amputation had taken place. Dr. Montgomery had considered that the bands which caused amputation in utero, were produced by inflammation, but he (Dr. Lee) thought these bands might be possibly formed by an extension of the amnion.

Dr. Merriman had many years since seen a case in which the placenta was attached to the head of the child. He recollected only that the child was born at the sixth month of pregnancy, and that the membranous portion of the placenta was the part attached; the mother had been in ill-health during the entire pregnancy.

A case was read by Dr. Wilson, of the Middlesex Hospital, of a man who having drank freely of beer and spirits, swallowed an ounce of laudanum. The treatment pursued consisted of the use of the stomach-pump, flagellation, bastinadoing, and the cold douche, followed by a cayenne plaster to his stomach. These means were persevered in with success, and the man, although in a state of coma for many hours, eventually recovered. To such an extent was it found necessary to use the bastinado, that the integument of the feet sloughed.

MEDICAL SOCIETY OF LONDON.

Monday, February 11th, 1839.

Dr. Davison, President.

SECONDARY SYPHILIS.—THE INFLUENZA.

Dr. Field inquired if members had met with any cases of secondary syphilis in which there had been no primary affection? He had seen several cases in which the secondary disease was unequivocally present, and which got well under the use of mercury, sarsaparilla, and the other remedies for syphilis; he believed that there must have been primary sores, although in these cases no evidence of such existed.

Mr. Hooper had been much annoyed by a case in which secondary symptoms were present, and there was no suspicion that there had been primary symptoms. The disease resisted all means of cure; salivation had a temporary influence over it, but when the effect of the mercury was gone the symptoms returned. Some pathologists had even said that the disease might be contracted by the contact of the lips; he could not offer an opinion on this point, but he had seen a sore on a young lady's lip, exactly resembling a chancre, and which got well under treatment for that species of ulceration.

Mr. Dendy considered that if syphilis could be propagated in the insidious manner mentioned, it would be much more prevalent than it was. The idea that such mode of propagation did exist, completely interfered with all the received notions regarding the pathology of the disease.

Dr. T. Thompson read a portion of a very elaborate paper on

THE INFLUENZA.

He first gave a very minute description of the symptoms characteristic of the disease, consisting of pyrexia, which might be either slight or grave; catarrh of a mild or aggravated character, pains in the head, and debility; and it might be complicated with inflammation of the thoracic viscera or of the head. The author then proceeded to give an historical account of the affection, which was first mentioned by Hippocrates, but became frequently prevalent in England about the beginning of the fourteenth century. It has continued to occur at various periods in this and other countries up to the present time, the attacks varying in intensity, and the characters of the disease

differing. The author mentioned the chief peculiarities of all the more general attacks of the disease from the fourteenth century to the present time; and he then deduced from the historical detail the following facts:—That we were visited by this affection every ten years, and that it was the most destructive of all epidemics; that it left a modification of atmosphere for years after it raged, which induced those affections which usually accompanied influenza, such as bronchitis, catarrh, &c. The disease when unaccompanied by any organic affection was seldom fatal; when organic disease did exist it was productive of very fatal consequences. In those cases in which the intensity of the simple disease proved fatal, the membranes of the larynx and bronchi were red and injected, and there was an excessive quantity of mucus in the lungs, which appeared to have prevented the necessary arterialisation of the blood. The disease varied in different climates and constitutions, and its complications depended on that portion of the body which was the weakest; in one being the head, in another the lungs, &c. Regarding the cause of the disease, this varied as much as the symptoms. It, however, took a course like cholera, from the west towards the south, and thence northward. The average period of its duration was six weeks. It had been ascertained that in some places where the epidemic had raged, the atmosphere had become so modified as to affect visitors who arrived a long time after the disappearance of the disease. Some of the epidemics attacked most frequently those exposed to the vicissitudes of the weather, while others became more prevalent among persons in sheltered situations. A remarkable case of the former exception had occurred in Newcastle, in which a large number of coal-dredgers all escaped, though the disease was very prevalent in the town. Regarding the theories advanced respecting the disease, Cullen had called it contagious catarrh; but contagious diseases generally travelled more slowly than did this epidemic, which often affected whole countries in a very short space of time; the theory of contagion would not explain the occurrence of the epidemic in ships a long distance at sea, and and which had left the ports weeks before the disease appeared on shore. In favour of contagion, the fact of the members of a family becoming affected one after another, and the appearance of the disease in places at which visitors had arrived from affected parts, might be adduced. He (Dr. T.) was inclined to think that the disease might be occasionally propagated by personal infection, but this was only incidental and occasional. He should place the affection very low in the scale of contagiousness. Regarding the production of the disease, from great atmospheric vicissitudes, and the prevalence of particular winds, there was much evidence, at first sight, to countenance this theory; the immunity of sheltered places, and of those which were not exposed to particular winds favoured this opinion, but against it were to be ranged its occurrence in every climate and at every season; its being present at the same time in countries where there was great heat, and in those where there was intense cold. Vicissitudes of atmosphere also frequently occurred, and influenza did not result from them. Regarding the origin of the disease from the presence of noxious matter floating in the atmosphere, the fact of dark spots being observed on the linen of those affected with plague and cholera, might be mentioned; as well as the effects which the habitual particles of some substances, such as ipecacuanha, in the air produced, viz., dyspnœa, &c. And also the prevalence of hay asthma from the odour of spring grass. This idea, however, was merely speculative; but had the impurities in the air a volcanic origin, the general prevalence of the disease would be more easily accounted for. There were objections to the electrical and magnetic theories of the cause of the disease; though in respect to the former, the affection was frequently preceded by thunder-storms, and in regard to the latter, the course the disease took would favour somewhat its adoption.

The hour of the Society having expired, the reading of the remainder of the paper was deferred until the next meeting.

WESTMINSTER MEDICAL SOCIETY,

Saturday, February 16th, 1839.

Dr. CHOWNE, President.

OPEN FORAMEN OVALE.—SOURCES OF ERRORS IN DIAGNOSIS.—MALARIA AND ITS EFFECTS.—CAUSES OF DISEASES ON THE BANKS OF THE THAMES.—UNHEALTHY SITUATIONS OF THE PENITENTIARY, BUCKINGHAM PALACE, AND SEVERAL NOBLEMEN'S HOUSES.

Dr. GOLDING BIRD exhibited the heart of a child ten months of age, in which the foramen ovale was patulous. The little patient had fallen a victim to pneumonia and bronchitis, which had been mistaken for a head affection by a practitioner in attendance. Previously to the occurrence of the chest disease the child had exhibited no signs of an open condition of the foramen ovale. During the last forty-eight hours of life the countenance had a peculiarly leaden hue. Auscultation detected unequivocally the presence of pneumonia and bronchitis, and Dr. Bird thought that he once heard a bruit in the region of the heart, but this sound was rendered obscure by the respiratory murmurs. The case illustrated a fact which he had spoken of in the Society a few weeks since, in con-

nection with a similar case, viz., that the foramen ovale might be open for a long period without the blueness of the skin being present, which symptom, however, took place when there was an obstruction to the circulation through the lungs.

Mr. GREGORY SMITH had examined three bodies lately, in two of which the foramen ovale was open, though no signs of this fact had been present during life. He believed that there was a patulous condition of the foramen ovale, to a greater or a lesser extent, in the majority of persons.

Dr. ADDISON said that it was easy to explain why obstruction to the circulation through the lungs should produce a blue tinge of the skin in persons with open foramen ovale, though no symptoms of it had, previously to the pulmonic disease, been present; the auricle became distended by the retardation of the flow of blood, the opening of the foramen became stretched, and mixture of the venous and arterial blood thus took place. Affections of the chest in children, particularly pneumonia, were frequently mistaken for cerebral disease; the mistake was less frequent in bronchitis, in consequence of the symptoms of the latter affection being generally more prominent.

Dr. WILLIAMS believed that the mistake alluded to by Dr. Addison occurred with great frequency. The head was considered the seat of the disease because convulsions were present; but these were not at all uncommon in chest affections. The occurrence of such mistakes as that in question showed the great advantage and necessity of attending to the physical signs of chest disease, the presence of which would be easily detected by the ear.

Mr. SNOW inquired whether affection of the head did not often really exist in these cases as a result of the pneumonia? The impediment to the circulation through the lungs would cause congestion at the right side of the heart, which would retard the passage of venous blood from the head, and produce congestion there. He had seen a neglected pneumonia in a man cause a congestion of the brain, which appeared to be the cause of death rather than the original affection; and another case in which fatal cerebral symptoms were induced by an enormous bronchocele so pressing on the trachea as very much to impede respiration.

Dr. ADDISON related a case of a man who died from apoplexy, in whom the pulse was extremely irregular, intermitting, and throbbing; he was profoundly comatose; his breathing was rapid and stertorous; a large clot of blood was found deeply seated in the substance of the left side of the brain. He (Dr. Addison) had never seen these symptoms in any case in which the clot was not *very large*. Although the patient was comatose for forty-eight hours before death, he always lifted his left hand to button his shirt-collar, when any one opened it, and this too, until within a few hours of his decease; this slight degree of intelligence being accounted for by the clot being so deeply seated, and not implicating the cerebral cavities. After a few words by one or two other members, Dr. ADDISON made some observations on

MALARIA.

He commenced by saying that the subject was one which had not been done justice to, either by the profession or the public, and he trusted that the observations which he was about to make might have some influence in directing attention to it. In the first place, what did we mean by the term malaria? The original meaning of the word was simply "bad air;" this, however, did not exactly express that which he wished to bring under discussion. He should, therefore, define it to be a something recognised chiefly by its effects on the general health, and occurring in certain localities, under certain circumstances, for the evolution of this something the presence of moisture, a certain degree of temperature, and vegetable matter, being required. He distinguished malaria, as thus defined, entirely from that influence by which plague, small-pox, and other contagious diseases were propagated; perhaps, however, the circumstances which rendered these diseases epidemic might depend upon a malaria, but of this we had no proof. Regarding the question as to what was the *nature* of malaria, he considered, in spite of the many ingenious theories which had been advanced, that we were, in fact, entirely in the dark. We did not know whether it was a distinct substance, or whether it only acted by affecting the tenacity of the atmosphere, or by altering the proportions of its different constituents. What were the circumstances under which miasma was found to exist? Now, although it was generally thought that the presence of a marsh was necessary for the existence of this agent, yet it was by no means the case; for, wherever there was a decay of vegetable matter going on, miasma, to a greater or lesser extent, would be present. In a paper published in the "Philosophical Magazine," on Miasma, by Mr. Hopkins, of Liverpool, that gentleman had endeavoured to explain, that it depended merely on the quantity of moisture which was present in the atmosphere, by which sufficient evaporation was not carried on from the body, and disease was produced. Dr. Ferguson had considered that malaria did not depend upon the decomposition of vegetable matter, but resulted simply from an arid condition of the surface of the earth, following a very prevalent state of moisture; but, even in this case, the stratum of moist earth underneath the dry surface would be acted upon, and the decay of vegetable matter would take place.

He (Dr. A.) saw no reason in more modern theories to abandon the old-fashioned doctrine that miasma depended on a change exerted on vegetable matter by a certain temperature and moisture. Animal matter would, of course, to some extent, be present, though he would leave it out of consideration in these observations. Now, were there varieties in the nature of this exhalation, or was it always identical; the different effects in different individuals depending on its various states of intensity, and on the peculiarities of constitution? He was inclined to question whether either of these ideas was correct; for instance, we saw a full dose of miasma from its pure source, a marsh, produce an attack of ague; yet we saw the same effects in places near which there was no marsh. It had been stated that, in an attack of ague, all the viscera became congested, and when the attacks became frequent, organic disease was produced, and dropsy was the result. This might be true in the long run, but it was liable to objections, for malaria would produce disease of the viscera, from slight functional disorder of the stomach, up to fatal organic disease of the intestines, without ague being present. No one doubted the influence of malaria when the symptoms of ague were coupled with the visceral disease, but when there was no ague, and when visceral disease occurred in neighbourhoods where miasma was not supposed to exist, then the influence of this agent was often overlooked. It was to prove, then, that miasma did produce visceral disease independent of being coupled with ague, that induced him to address the Society on the subject. Regarding the places in which miasmata were most manifested in the metropolis, it was not necessary to go into the history of the subject, but the scavenger was one of the best friends to humanity, for, by removing vegetable matter from the metropolis and its suburbs, the sources of malaria had become much less extensive. Where did we find the effects of miasma most prominent? He had been for many years assistant-physician at Guy's Hospital, which numbered frequently 50,000 out-patients annually, and he had found the effects of miasma to be most prevalent in the vicinity of the river. Now, the effects produced by miasma admitted of some doubt, inasmuch as many concurrent causes were at work; such, for instance, as intemperance, exposure to weather, and other depressing agents; but when the effects he had alluded to became so frequent and so localised, the evidence that they arose from miasma became irresistible. The slightest deviation from health, produced by this poison, consisted in a state which the patient was unable to describe, no particular symptoms being present, but he felt dejected and indisposed. Others, again, still further influenced, laboured under the symptoms of dyspepsia; the tongue was foul, the appetite bad, and the fæcal evacuations were unhealthy; proceeding still further, some viscus was congested, the face became pale, there was a sense of fulness at the pit of the stomach, with some tenderness in that region; the liver could be felt below the margins of the ribs, and, in some cases, these symptoms were followed by ascites or dropsy of the lower extremities. Another patient, still further affected by the miasma, would exhibit all the symptoms of anemia; the eyes becoming of a pearly whiteness, and the patient being exceedingly feeble; in these cases the spleen was generally enlarged. In other patients there was a dry and shrivelled appearance of the countenance, accompanied by an expression of great distress, indicative of visceral disease, which eventually wore out the patient by producing a general dropsy. Now, were these effects limited simply to functional disorder, or did they extend to the production of organic changes, and, if so, what was the nature of those changes? In examining the spleen of patients affected by miasma, he had found it to be simply hypertrophied, exhibiting no signs of disease. The liver, when not originally diseased, or except in persons of intemperate habits, he had never found affected beyond a state of congestion and enlargement. He had never seen the hob-nailed or granular liver in any case in which there was not evidence of the patient having been of intemperate habits. How far organic disease of the liver, as occurring simply from miasma, extended, he had not yet been able to determine. Now, were the effects of miasma modified in some instances, and, if so, what was the nature of that modification? He believed modifications did occur to a remarkable extent. For instance, in a very hot autumn succeeding to a damp summer, in marshy places, the miasma appeared to be copious and intense, and a patient who had been reaping in those districts, was brought up to the hospital in a state apparently of typhus, or of severe continued fever; in illustration of which, he mentioned the case of a stout Irishman who was admitted under the above circumstances, and who was thought to be labouring under typhus; he was in a state of great excitement, the face was flushed, the eyes ferretty, the tongue was dry and brown, and he was delirious. A brisk purge was given him, and in forty-eight hours the symptoms of ague exhibited themselves. Now, did these violent effects depend upon the intensity of the miasma, or did they arise from an ordinary dose of the poison conjoined with the exposure to great heat and vicissitudes? He (Dr. A.) was inclined to the former opinion, although he admitted that the intense heat might have had some effect in rendering the symptoms more ag-

gravated, by acting upon the mucous membrane and disordering the secretions; and hence the effects of purgatives in producing a mitigation in the severity of the paroxysms, and in increasing the length of the remissions. By the second modification of the effects of miasma remittent fever was produced. These facts led to the question as to the identity of fevers; Dr. Armstrong had imagined that all fevers were identical, and, in support of this view, he advanced the facts, that remittent fevers often became intermittent; or intermittent became remittent, and so on. He (Dr. A.) however, strongly suspected the idea of Dr. Armstrong was a mistake originating in the modifications produced by miasma. As all the varieties of fever occurred in the same district, it led to the belief that they were various forms of the same disease. He never saw a genuine case of typhus go into remittent or intermittent fever. There were other points respecting miasma worthy of attention; this agent was, generally speaking, without smell; it sometimes happened, however, to have an offensive odour, as when it arose from sewers or cesspools, and it then assumed a more deleterious power. The increase of the injurious effects did not depend, however, on the presence of the odour merely, as many bad odours were not deleterious; but there appeared to be something in vegetable decay, when attended by smell, which added to its baneful influence. In what way we were to prevent the occurrence of miasma in the districts he had alluded to, he could not say; for, so long as the river ebbed and flowed, leaving a large quantity of mud to be acted upon by the sun, so long would miasma exert its poisonous power over the population. Building over marshy spots was thought, by some, to render the places wholesome; but this was not the case, for, independent of the filth collected in low places, they were liable to exhalations which, not being sufficiently carried off by evaporation, produced derangement of the general health. Look, for instance, at the places where miasma was always exerting its evil powers, as the neighbourhood of the New-cut, the edge of the river, and the Old Kent-road, where the exhalations depending upon the moisture of the surface were never carried off into the atmosphere. Vegetable decomposition to a greater or lesser extent was going on everywhere, the comparative effects of its influence depending upon the comparative facilities with which the exhalations were got rid of. And yet, with such facts before them, the Penitentiary, found to be too unwholesome for convicts, was said to be intended by Government for a barracks, although three out of five of its inmates were affected by miasmatic diseases. Look, too, at the absurd situations in which our aristocracy built their mansions. The houses of Sir R. Peel and the Duke of Buccleugh faced the river, looking upon the mass of mud left by the receding tide. He could not believe that these positions were harmless, or that the individuals residing in them escaped entirely from the effects of the miasma. It must not be forgotten that these aristocratic tenants were free from the hardships and exposures which, in the poor, led to the full development of miasmatic poison; and hence the escape of the former from its more fearful effects. Look at the mansion of the Duke of Northumberland, at Charing-cross, the only open front of which faced the river; while the opposite side was well guarded from the entrance of any breezes from the north or west. But the situations of all these places were nothing compared to the site of Buckingham Palace. Dante, himself, when writing the "Inferno," would have been pleased with the view of this miserably situated edifice, as taken from Piccadilly by twilight, the lamps flitting in the perpetual fog, like so many evil spirits. On a beautiful morning when all around was bright, Buckingham Palace was enveloped in fog and smoke. These were a few of the facts respecting malaria; the subject was not exhausted, but he was fearful of saying too much. He would conclude with the observation which he started with, that the public and the profession too much neglected the subject.

Mr. Snow thought that the diseases caused by the miasmata of the Thames, and witnessed by Dr. Addison at Guy's Hospital, should not be taken as a fair specimen of marsh fevers generally, insomuch as the usual cause of these fevers was here complicated with the decomposition of a great deal of animal matter; and sulphuretted hydrogen, and the other products of animal decomposition, though they gradually undermined the health, did not of themselves cause ague. He hoped that the bed of the Thames could be so altered that the mud would not be exposed between each tide; the inhabitants of Newcastle were very subject to ague until some time during the last century, when the river Tyne was so far deepened that no mud was left exposed near the town between each tide.

Dr. Johnson said that the subject brought forward by Dr. Addison was one of so much importance that it could not be discussed in one evening, he, therefore, should move an adjournment of the Society; previous to which, however, he would state, that what Dr. Ferguson advanced respecting miasma, rather favoured the views of Dr. Addison. Dr. Ferguson had ascertained that malaria existed in greatest force when the beds of rivers, or the surfaces of marshes, became dry, and were exposed to the heat; the ground then cracked in various directions for a long distance, and the miasmatic poison was given out. He (Dr. J.) thought

Dr. Addison had limited the cause of miasma too much, in restricting it to vegetable decay, inasmuch as there was always some animal matter present.

The debate was adjourned until this evening (Saturday).

BRITISH MEDICAL ASSOCIATION,

Exeter Hall, February 19th.

Dr. WEBSTER, President, in the Chair.

SEVERAL new subscriptions to the Medical Coroner's Fund were announced, and the amount ordered to be paid in to the bankers.

A letter was read from Septimus Read, Esq., addressed to the President, requesting that himself and son might be proposed members of the Association, at the same time showing that they were admissible as legally-qualified practitioners.

Septimus Read, Esq., 41, Jewin-street.
Reginald Read, Esq., 19, Artillery-place, West, Finsbury,

were unanimously elected members of the Association.

A letter was read, addressed to Dr. Granville by Wm. Curry, Esq. (Jan. 25), concerning medical reform, urging the attention of medical reformers to several important matters connected therewith.

The PRESIDENT laid before the Council the amended "Report of the Committee of the Faculty of Medicine, on the subject of granting Degrees of Medicine," from the University of London; and he took the opportunity of stating that in the month of October last Sir James Clarke had sent him the original Report (which subsequently appeared in the different journals), with a request that he (the President) would read it carefully over, and return it with his candid opinion thereon. This he had accordingly done, and while he was happy to agree with some parts of the Report, he had condemned the adherence of the University to the certificate and recognised-school system, instead of laying down a simple and uniform plan for practically testing the acquirements and abilities of all candidates who should present themselves for examination. He had also protested against the high fees which were to be exacted for granting the different degrees in arts and medicine. This letter Sir James Clarke had done him the honour to propose should be printed, with others from eminent gentlemen in the profession, containing many useful suggestions for the purpose of improving the Report of the Members of the Senate. The Report in its amended form had now been forwarded to him, and he was so far happy to observe that the certificate system, and the curriculum of education were somewhat altered and amended, and that the order of study, the number of lectures, and other minutiæ which an University ought not to interfere with, were cancelled; still the certificate system was not exploded. An important improvement as to fees was now introduced; instead of 55*l.* to be paid by the student, as formerly, they were now reduced to 24*l.*, which was as small a sum as could be desired, if fees were to be exacted at all. It was then recommended that the "Report, &c." should be referred to the Sub-committee on the National Faculty, which being moved and seconded, was carried unanimously. The propositions on medical education and practice received from the University of Edinburgh, and the College of Physicians and Surgeons of that place, were again brought before the notice of the Council, when, after considerable discussion, it was unanimously resolved, "That this document should be referred to the Sub-committee on the National Faculty question, and in doing so the Council begged to record their regret that at a moment when union is so important in the medical profession 'propositions' should have emanated from such influential bodies as the University and Royal College of Surgeons and Physicians of Edinburgh, which, if carried into effect, would not only continue the present useless and invidious distinctions and divisions, but would actually create others which have not hitherto existed in Ireland or Scotland, and have only been recognised in England by custom, not by law; that such divisions into distinct and separate classes, as 'general practitioners,' 'surgeons,' 'doctors in medicine,' 'fellows of colleges,' 'teachers,' &c., would only tend still further to degrade the profession, by unnecessarily elevating some of its members and depressing others, while all ought, for the security of the public health, to be equally educated, or nearly so, and their knowledge publicly and practically tested."

A letter was also read giving full particulars of the introduction of the disgraceful system of competition by tender into the Windsor Union, by the Guardians, and the election of a *non-resident* youthful practitioner to the important office of medical attendant upon the poor of the Egham district. It appeared to the Council that in Mr. Heyward's case, several of the recommendations in the Report of the Poor-Law Committee of last session had been departed from. After considerable discussion on the subject, and remarks that hitherto no good result had followed the parliamentary inquiry, as some grievances remained unredressed, and others were still being inflicted on members of the profession, it was unanimously resolved, "That as this Association mainly promoted the parliamentary inquiry of last session, an application be made to the Poor-Law Commissioners, respectfully

requesting them to receive a deputation from the Association, to afford information as to the continuance of the system of tender and election of non-resident officers, as illustrated by the late proceeding in the Windsor Union, and especially in regard to any alterations that have taken place, or are in contemplation, in consequence of the late parliamentary inquiry."

The meeting then adjourned.

THE LANCET.

London, Saturday, February 23, 1839.

We have read the following statement in the Sunday newspapers with considerable surprise:—

"At an inquest held on Saturday, at the Ship public-house, Stepney-green, on the body of a man who had died suddenly, Mr. Hislop, a surgeon residing in the neighbourhood, complained to the Coroner of the practice of chemists and druggists, and other persons not regularly educated, attending coroners' inquests, and giving medical testimony. He said he had known several instances of late, and he felt some surprise that the Coroner should have paid such persons the fees, which were awarded by the Act of Parliament to medical witnesses only. Mr. Baker said, that if persons attended to give medical evidence of the cause of death in any case, and swore that they were surgeons, he was bound to pay the usual fee, and the Act, in fact, left him no discretionary power."

If the fact had not been admitted that druggists, and other persons, *not* "legally-qualified practitioners," had been summoned, and heard, and paid as medical witnesses in Middlesex, one might have been disposed to believe that the conversation here alluded to had been inaccurately reported. For nothing can be more unsound than the gloss put upon the Medical Witnesses' Act by Mr. Baker. It would be inferred, from Mr. Baker's construction, that any uneducated person—one as ignorant of medicine as any druggist in Stepney—could intrude himself upon the Coroner, mislead a confiding jury, and get paid for the misdemeanour. The Act of Parliament does not afford the least colour to this monstrous assumption. The inquests at which druggists are suffered to play the part of medical witnesses, are absurdities; the Coroner has no right whatever to summon any but a "legally-qualified medical practitioner" under the Act, and where he attempts this violation of law, and perversion of justice, his own fees must be struck off by the magistrates upon the remonstrance of any ratepayer.

In the first place, the Coroner has to issue his "order"; and the order can only be lawfully directed to "a legally-qualified practitioner." The first section of the Act runs thus:

"Whenever upon the summoning or holding of any coroner's inquest, it shall appear to the Coroner that the deceased person was attended at his death, or during his last illness, by any *legally-qualified medical practitioner*, it shall be lawful for the Coroner to issue his order * * for the attendance of such practitioner as a witness at such inquest; and if it shall appear to the Coroner that the deceased person was not attended at or immediately before his death, by any legally-qualified medical practitioner, it shall be lawful for the Coroner to issue such order for the attendance *of any legally-qualified medical practitioner, being at the time in actual practice in or near the place where the death has occurred.*"

This seems to us exceedingly explicit. The term "legally-qualified medical practitioner" was purposely selected. It is as comprehensive as it could be rendered in the actual state of medical institutions: but no Coroner must pretend, for a moment, that the Act compels him to summon a druggist, or any other person, under the pretence that that individual is ready to swear that he has a legal title, and is really "a legally-qualified medical practitioner." Even if the unqualified pretender has attended to give medical evidence, he is not entitled to, and could not recover, the fee of the medica witness: for it is further enacted (sec. 3)—"That when any *legally-qualified medical* "*practitioner* [and no other] has attended "upon any coroner's inquest, in obedience "to any such order, as aforesaid, of the "Coroner, the *said practitioner* shall for "such attendance receive such fee, &c."

If the Coroner summon a witness not legally qualified it is clearly his fault; it is not a fault in the law, but a grievous error

in its administration. The Act contemplates, in certain cases, "the performance of a post-"mortem examination, with or without ana-"lysis of the contents of the stomach;" yet it would appear, if the report of Mr. Histop's statement be correct, that in several cases "druggists" and other persons have been summoned by the Coroner, who know nothing of anatomy, and could not carry the expressed intentions of the Act into effect.

In the present state of the law chemists and druggists are allowed not only to sell arsenic, and other deadly poisons, in the most reckless manner—but to prescribe over the counter, and visit the sick at their own homes. They would, no doubt, be very glad to get summoned as "medical witnesses," and thus cover their errors or escape exposure. But no Coroner, who has any respect for his office, or any desire to serve the public conscientiously, or any wish that the jury should have correct data before them in the investigation of the causes of death, would think of summoning ignorant persons, who, he must be well aware, have no more a legal, than they have a medical qualification.

"Mr. Baker," the report goes on to state, "said that if the law required mending in "this particular, it could not be effected too "soon." Unquestionably: but the law will do very well in this particular, and if the Coroners indulge in these abuses, the sooner they are "mended" the better it will be for the public.

Since the preceding remarks were written, we have been favoured with the following particulars of a case by a correspondent:—

"A young man named ——— ———, has recently opened a small shop as a chemist and druggist, in the neighbourhood of the Commercial-road. He practises in every branch of the profession, although he has not passed either College or Hall, nor ever attended a lecture on medicine or surgery. A short time since he attended an inquest and took the usual oath that he was a (duly qualified) surgeon, and obtained the fee awarded under the Medical Witnesses' Act."

If Mr. ——— has undergone no examination—and is not a legally-qualified practitioner—it must be confessed that perjury is an inauspicious introduction to evidence upon which the character and fate of a human being may depend. But why was an obtrusive and impudent pretender summoned by Mr. Baker? How did it happen that a witness who had received no medical education—had not studied the science of medicine, and was entirely ignorant of its principles, passed undetected in the Coroner's Court? Is it possible for an ignorant person to enter into any details respecting the cause of death without exposing his ignorance? And is it right that gentlemen should preside in the Coroner's Court who do not understand the medical evidence, and who cannot distinguish between the spurious statements of a druggist, and the truthful evidence of a medical witness? In circumstances like these, must not the jury be inevitably misled by the counterfeit witnesses summoned by the coroners, and mistaken for "legally qualified medical practitioners?" Can anything more decisive be adduced in proof of the principle that Medical Coroners are indispensable, whether the efficiency of the inquest, the protection of the public, or the interests of the medical practitioner be regarded. The days of Attorney-Coroners, and mock medical witnesses are numbered.

In the Sydenham district a case has recently occurred, which sets in a very forcible light the utility of the registration of the "cause of death," when viewed merely as a matter of medical police. Mary Neats applied to Dr. Scott, the Registrar of the district, to have her child's death registered. As she did not know the *cause of its death, and had not employed a medical man*, an inquest was held on the body. Arsenic was discovered in the child's stomach. If the mother had not been called upon by the Registrar to assign the cause of the death, the unfortunate child would have been buried without suspicion. These cases—and they are numerous—in which patients

die without medical attendance, or under the hands of druggists and ignorant empirics, who cannot form a diagnosis, can only be detected when all well-informed medical practitioners agree to write down the cause of death, so far as it is ascertained, and to attach to it their signature. The fact that the certificate of an unqualified person, or that no medical certificate of the cause of death is produced, will then excite suspicion at once, and lead to investigation. We scarcely know of any step better calculated to suppress quackery, or more likely to act beneficially as a measure of medical police, than a clause to compel every person who undertakes the treatment of a sick person, to attach his signature to the assigned cause of death. This would tend to purge ignorant pretenders from the ranks of scientific practitioners: for it is clear that the empiric, unless he wrote down his own nostrum, would be puzzled, in almost every instance, in assigning the cause of death, as, unfortunately, it is easier for him to cause death, than to distinguish its causes.

A Statistical Abstract of the Causes of Death in England and Wales is, we understand, in the course of preparation. The facts which are collected under the Act for the Registration of Births and Deaths will exhibit the influence of different localities, occupations, &c., on the mortality and sickness; it will point out the rise and progress, and prevalence of every disease, and throw a flood of light on medical science; but to render the observations as perfect as they can be made in the present state of science, the medical attendant should invariably *write down* the cause of death, and the duration of the illness (when known). His signature should be entered in the register.

When the Registrar-General's Report is laid before Parliament, we shall discuss the subject of Registration fully, as we consider the record of the causes of death of the people of England and Wales a matter of incalculable importance, whether regarded as to its bearings upon medical science, or upon public health.

CORONERSHIP OF MIDDLESEX.

At the close of the poll at four o'clock on Wednesday last, more than two thousand freeholders had recorded their votes in support of the Medical Candidate for the office of Coroner for the metropolitan county. Mr. Adey, the Attorney Candidate, had, with infinite difficulty, brought up about one-fourth of that number to oppose the common sense of the county. Although the contest has virtually terminated, by the resignation of Mr. Adey on Wednesday last, yet the law requires that the poll shall be kept open until four o'clock on Monday next, when Mr. Wakley will be sworn in as Coroner for the county, and the triumph of the medical cause be completely achieved. We forbear, until then, making any observations on the vexatious opposition which has been offered by a candidate who, from the outset of the contest, never had the slightest prospect of success, or the most slender claim to support from the freeholders of this important county. The only apparent object which he, or the party inciting him, seems to have had in view, was to crush the Medical Candidate by the ruinous expense of a protracted contest. It remains for the medical profession, whose battle has been successfully fought, to determine how far this worthy project shall succeed.

Although crushed on the first day of the election by an overwhelming majority, Mr. Adey excused himself for continuing a hopeless contest by the sophism "that he daily "gained ground in the relation between his "votes and those of his opponent," suppressing the main fact that the majority of Mr. Wakley increased, not only daily, but on every day's poll. This reminds us of a problem which schoolboys are wont to propose to each other:—"If a snail climb up "a post two inches every day, and slip down "three, how long will he take to arrive at "the top of the pole?"

THE MIDDLESEX MAGISTRATES AND THE CORONERSHIP.

ONE of those contemptible productions of spleen, for which a certain class of persons are celebrated, was exhibited on Thursday, Feb. 7, at the County Court-house, Clerkenwell. The retirement of Mr. Burchell from the contest for the vacant coronership having left Mr. Wakley's election a matter of certainty, it has been suddenly discovered that the duties of coroner are so arduous—so much beyond the physical and mental capabilities of two men, that an additional coroner (making a third) was imperatively necessary! It is true the Coroner recently deceased (at the age of 94) was deemed capable of sustaining this heavy load of duty, and also of performing the duties of clerk to the magistrates; it is also true that while there was the probability of a contest for the vacant office not a whisper of the duties being too heavy for the powers of one man was heard. But conviction was forced on certain of the magistrates by circumstances which they had not the power to control; and at the last hour, on a memorial signed by the overwhelming number of *fifteen* freeholders, an application was determined to be made to the Lord Chancellor to supersede the writ he had issued for the election, and to appoint that *two* instead of *one* coroner should be elected to fill the vacancy! It was decided accordingly, on Thursday, by a division of 24 to 5, to apply to the Lord Chancellor for an additional coroner. It appears, however, that those magistrates who became thus suddenly enlightened to the necessity of an additional coroner, made the discovery too late. Sir J. S. Lillie, who seemed by no means disposed to give credit to the assurance of purity of motive, and the entire disregard of personal or party objects, which some of the worshipful bench volunteered on the subject—stated that the Attorney-General had on the preceding evening given it as his opinion, that the Chancellor's writ commanding the election of a coroner, being in the Sheriffs' hands, and they having fixed the day of election, it was now too late to make the application.—*Examiner*, Feb. 10.

The Middlesex magistrates have received a practical reproof for their paltry attempt to diminish the value of the coronership which they were unable to secure for a *protege* of their own. The Lord Chancellor has returned an answer to the memorial in which they prayed his Lordship to issue a writ commanding the election of an additional coroner, to the effect that he does not see any reason for acceding to their request.—*Globe*, Feb. 6.

(*From the Morning Chronicle of Tuesday, Feb. 19th, 1839.*)

"The election of Coroner for the county of Middlesex is still carried on, although the numbers polled give Mr. WAKLEY such a majority as to leave his opponent no probable chance of success; but it must occasion a very severe expense to the individual who will soon be called to the performance of arduous public duties, the diligent and useful discharge of which cannot be promoted by his having been subjected to a harassing and ruinous expenditure. This is not the battle-ground of Reformer and Tory, and we should deprecate its being made so. The man best able to discharge the duties of Coroner is the man who ought to be elected. The freeholders of the county manifestly are in favour of Mr. WAKLEY; and his opponents say, by their thus vexatiously carrying on the contest, "if we cannot beat him by votes, we will ruin him by expense." We recommend those freeholders who are opposed to this ungenerous proceeding to step forward with spirit, and, for the sake of justice, to take the matter into their own hands. Let Mr. WAKLEY be released from expense by a public subscription to defray all such charges as would decide the present contest, and thus set a precedent from which great good will be derived. A correspondent, who says he has taken no part in the election, not being a freeholder, asks us to suggest this course, and also to inform him where he can pay his £5 in aid of it. We hope the freeholders of Middlesex will quickly respond to his proposal, and tell him."

The following advertisement appeared in the London morning papers of Feb. 19th:—

The Committee for conducting the election of Mr. Wakley, believing that the contest for the Coronership is now prolonged by his opponent solely to put Mr. Wakley to expense, it was determined, at a full meeting, held at the Crown Tavern, Clerkenwell-green, on Monday evening, February 18th, (George Offer, Esq., in the chair), in compliance with the solicitation of many independent Freeholders, that a GENERAL PUBLIC SUBSCRIPTION should be opened in aid of the Fund which has been instituted by the British Medical Association, to elect Mr. Wakley free from all cost to him, and thus effectually defeat the unworthy object of his antagonist.

Subscriptions may be paid to the account of George Webster, Esq., M.D., Treasurer, at the banks of Messrs. Coutts and Co., 59, Strand; Messrs. Cockburn and Co., 4, Whitehall; and Messrs. Grote, Prescott, and Co., Threadneedle-street, City.

C. H. R. Harrison,
Hon. Secretary to the Fund.

Wakley 1,824
Adey 471
Majority for Mr. Wakley 1,353

Joseph Croucher, Sec.

Crown Tavern, Clerkenwell-green,
February 18th.

MEDICAL JURISPRUDENCE.

COMBINATIONS OF ARSENIC AND ANTIMONY WITH HYDROGEN.—MARSH'S APPARATUS.

MM. Morh and Leibig have recently published the following observations on Marsh's apparatus for the reduction of arsenic.

By following Mr. Marsh's excellent method for the discovery of minute traces of arsenic, the chemist is liable to fall into error unless he employ the utmost precaution in all cases where the fluid examined contains any other metal. When this occurs the gas disengaged during the process carries over with it some excessively minute drops of the fluid; and these drops contain a portion of the metal, which is reduced by the flame, and becomes attached to the porcelain plate exactly in the same way as the arsenic. It is extremely difficult to condense the drops of fluid alluded to. This cannot be done effectually by passing the gas through a tube twelve inches in length, and filled with fragments of potass; it is better to fill the tube with bits of fine wool; but in every case it is necessary to test the nature of the metallic crust which lines the plate of porcelain. Arsenic is immediately dissolved by nitric acid, the hydrosulphate of potass, &c.

Instead of burning the arsenuretted hydrogen, it might be decomposed by passing it through a tube of one-twelfth of an inch in diameter, heated to redness over a spirit-lamp. The arsenic is thus deposited at about two inches from the orifice of the tube, beyond the red-hot portion, in the form of a brilliant black metallic circle. The other metals which are carried over mechanically by the gas are also reduced, but they remain fixed in the red-hot portion, and are not carried further. The sulphuret of arsenic may be submitted to the same test as arsenious acid and arsenic; or the following method may be employed:—Dissolve the sulphuret in a solution of potass, then drop in a solution of nitrate of silver until the whole of the sulphur be precipitated; next add hydrochloric acid, slightly in excess, filter and precipitate the arsenic acid with lime-water; dry the precipitate carefully, mix it with powdered charcoal and reduce it in the ordinary manner.

On the methods of Marsh and Simon, M. Berzelius remarks, that Mr. Marsh has neglected a property of arsenuretted hydrogen, which may be turned to great account, viz., that of depositing metallic arsenic by heat. The apparatus is extremely simple; we have merely to pass the gas, as it is gradually disengaged, through a tube which is heated to redness over a spirit-lamp; or, if we desire to be more exact, we may place a given quantity of copper (reduced by hydrogen) in the heated portion of the tube, and we thus obtain an arsenuret of copper, which will enable us to determine with great precision the quantity of arsenic combined with the hydrogen. To reduce the sulphuret of arsenic M. Simon proposes to employ quicklime instead of the tartrate of lime. M. Berzelius thinks it better to employ light charcoal impregnated with a solution of carbonate of soda, and placed in a tube of 1-24th of an inch in diameter, which is closed at one end. He places the sulphuret first in the tube, then a few scales of the charcoal, from one-half to an inch in length, and draws out the empty part of the tube to a fine point. He now heats the charcoal over a spirit-lamp, with a double current of air, and then exposes the sulphuret to the flame. The sulphuret passes, at first, into the charcoal unchanged, but as the heat gradually softens the tube, it is decomposed, and the arsenic is sublimed into the pointed end. The same means may be employed for the reduction of arsenic acid.

The ammoniated hydrogen gas discovered by Dr. Thomson contains but a very small quantity of antimony, especially when prepared with zinc and antimony. If the gas thus prepared be disengaged very rapidly some metallic antimony is attached to the upper part of the mattrass, and no change takes place on its being allowed to cool; but if the gas be disengaged very slowly, and allowed to rest, metallic plates of antimony separate after a short time. The arseniuretted hydrogen may be easily distinguished from antimoniated hydrogen by the introduction of a small quantity of chlorine, which precipitates metallic arsenic from the former, but does not produce any precipitate in the latter. The flame of both gases, when directed against a porcelain plate, covers it with a metallic crust, but it is easy to distinguish whether the metal be antimony or arsenic, in the following manner:—Dissolve the metallic crust with a few drops of eau regale; then add a few drops of water saturated with sulphuretted hydrogen; this produces a golden-yellow precipitate with arsenic, but an orange-yellow one with antimony; the former is soluble in ammonia, the latter not.—*Journal of Pharm.* Feb. 1839.

A HUMANE OVERSEER—CORONER'S INQUEST.

To the Editor of THE LANCET.

SIR:—I take the liberty of inclosing to you an account of a coroner's inquest, which was lately held not far distant from my residence. I am, Sir, your most obedient servant,

CHRISTOPHER LLEWELYN.

Llannymynech, Feb. 17, 1839.

(*Shrewsbury Chronicle, Friday, Feb.* 8, 1839.)—An inquest was held on Friday last, before C. M. D. Humpheys, Esq., Coroner, at the Plough Inn, Trewern, in the parish of Buttington, Montgomeryshire, on the body of a man unknown (supposed, however, to have come from the neighbourhood of Wednesbury, Staffordshire), who died in a state of the greatest destitution. The following evidence was adduced:—Thomas Williams, of Trewern, farmer:—I found the deceased about 8 o'clock in the morning in a field below my house, lying in the ditch, which was nearly full of water; he was quite cold and insensible—I took him into the building, and put him into some straw, and sent for the overseer; I returned again in about an hour, and found him in the same state as when I left him. Edward Davis, overseer:—I went to see him, (deceased) and found him in the barn, in the straw; he was very cold and unable to answer my questions; I had him removed into an adjoining cottage, and gave him a jug of elder wine; he appeared very weak and ill; in a week after I sent for Mr. Maurice Jones, surgeon, of Pool, to see him. This witness, upon cross-examination, admitted that he allowed this poor creature not only to remain a week without medical aid, but during the whole period of his being at the cottage, to lie on straw, without bed, blankets, or any suitable covering whatever. Mr. Maurice Lloyd Jones, surgeon, Welshpool, said—about a week or nine days ago the overseer came to my house and requested me to see deceased. I found him in a state of the greatest debility; he appeared to have suffered very much from cold and the want of the common necessaries of life; his toe was frost-bitten, and upon examination of his back, I found an extensive slough on either side of the sacrum; there was also a circular patch of inflammation on one of the scapulæ; these marks, in my opinion, were probably caused from his having been confined for a length of time upon his back. He could give no answer to my questions, and appeared to be deficient in intellect. I ordered him every proper nourishment and support, which I have reason to believe he had after my visit. I only saw him once. In my opinion the deceased died from natural causes. The Coroner briefly addressed the jury, and observed that after the very able evidence of Mr. Jones, they would have no difficulty, in this unfortunate case, of coming to a satisfactory conclusion.—Verdict, "Died by the visitation of God."

THE NEXT COUNCIL

OF THE

MEDICO-CHIRURGICAL SOCIETY.

To the Editor of THE LANCET.

SIR:—You have ever been a consistent champion of the best interests of the profession, and of the "so-called" general practitioner, in particular, who is, *in general*, too culpably indifferent to them. With these impressions, I venture to call your attention to the coming election at the *Royal Medical and Chirurgical Society*, of officers and Council for the ensuing year.

In the mode of election there has been great reason for complaint, inasmuch as a balloting-list has been always prepared by the Council, and, unless a faction get up an opposition (which would be much to be deprecated) this list is invariably proposed and carried.

The Council, you will perceive, are, thus, a *self-perpetuating body*. This is wrong. In the present Council, 21 in number, there is but *one general practitioner*, Mr. Davis, of Hampstead.

The laws of this Society say, "That there shall not be a greater proportion of members practising pharmacy than one-third of the whole." If, then, it be found expedient to admit them to the body, let the same principle be carried out, and one-third of the members of Council be general practitioners. This is just, and though it may be that *this* year the appeal will be in vain, yet, ultimately, it will, nay, it *must*, be conceded.

May I beg you to notice this point in your next, if possible, as the election is on the 1st of March.—I have the honour to be, with great respect, Sir, your most obedient servant,

PHILO-JUSTITIÆ.

P.S. I understand that Dr. Clendinning resigns the Secretaryship on *principle*, considering that it ought not to be held for years by the same individual, "Auspicium melioris ævi."

INFIRMARIES OF IRELAND.

Returns of the following particulars have been "ordered" by the House of Commons, on the motion of Mr. W. S. O'Brien, M.P.; —Feb. 18th, 1839:—

Of the total annual income of every infirmary, fever hospital, and dispensary in each county, county of a city, and county of a town in Ireland, supported partly or entirely by public funds, during each of the years 1835, 1836, and 1837; showing the amount of funds derived from county presentments, from subscriptions and donations, and from other sources.

Of the total annual expenditure of every such institution during each of the above years; specifying, in detail, the sums paid in salaries to the medical attendants, and in salaries and wages to other officers, and to servants, for medicines and contingencies.

Of the number of patients admitted as interns into every such institution during each of the above years, and of the number that was discharged, and that died.

Of the number of extern patients that obtained medical aid from every such institution during each of the above years, and of the number that was attended at their own residences, so far as the same can be procured.

Of the number of patients in every such infirmary and fever hospital on the 31st day of December, 1837, and of the number of beds which every such institution was then capable of containing; and of the number of physicians, surgeons, and apothecaries attached to every such infirmary, fever hospital, or dispensary, at that date.

Of the number of governors to every such institution, on the 31st day of December, 1837, who were qualified ex-officio, or by payment of subscriptions, to vote in the election of medical officers; specifying the number of each class of governors.

General summaries of the foregoing returns, brought out in totals, for the whole of Ireland.

WESTMINSTER HOSPITAL.

GANGRENE OF THE TOES OF BOTH FEET.

Ellen Fraser, aged 30, a single woman, was admitted under the care of Sir Anthony Carlisle, on the 19th January, 1839. The woman was under the influence of syphilitic virus. Copper-coloured blotches are displayed over the face and neck. Several patches of the frontal and parietal bones are thickened. On admission she complained of severe pain in the feet, in the spine of the tibia, and in the heel. All the toes of the right foot are sphacelated, as well as the second and third toes of the left foot. About a year ago she was a patient in the hospital with an abscess in the arm. On going out she became a prostitute, and was on the town for five months. She came under the care of Mr. Malyn, at St. Margaret's Parish Infirmary, having secondary symptoms of lues, with nodes of the shins; she remained in the infirmary for seven months, and was discharged cured on *Saturday*, the 12th of January last. The overseers gave her *a shilling*, because she had no home to go to. The same night she was found drunk by a policeman, and thoroughly wet to the skin. She was placed in a boarded room in the district watch-house, without bed or any other covering but her humid clothes, and without fire. On Sunday she remained in the watch-house, and received a small piece of bread from the overseers, and half a pint of coffee, which she purchased with the remnant of her shilling. On Monday morning she had no food. At mid-day she was discharged by the magistrates, and received a piece of bread and cheese. In the afternoon she went to the house of a friend, who gave her food, and received her under her roof. The same night (Monday) on pulling off her shoes and stockings she was affected with sudden pain in the left foot, which continued all night, and prevented her from sleeping. Throughout Tuesday the pain was unabated. On Tuesday night she had no sleep again from the same cause. On Wednesday morning the second and third toes of the right foot were affected in the same way as those of the left. During Tuesday she had in vain essayed to keep the feet warm by the aid of warm water and other means. On Wednesday morning the affected toes assumed a blue colour, and the pain was increased in severity. The pain was always aggravated by putting the feet in hot water. During Wednesday common sensibility had ceased in the discoloured parts, but severe pain was referred to them. On Thursday she could not walk with security. She applied, of her own accord, a bread-and-water poultice. At night, again, she could get no sleep. On Friday the sufferings of the patient were intense. She continued her poultice to both feet. The poultice afforded some alleviation for a time; but, again, at night she could not procure a moment's forgetfulness in sleep, the right foot paining her most severely. On Saturday Mr. Archer, the house-surgeon, by whom she was principally treated, and who drew up this circumstantial history, took her into the hospital. All the toes of the left foot, and two of the right toes were sphacelated. Mr. Archer immediately applied a poultice of linseed-meal and beer-grounds. He gave her brandy, a mixture of ammonia, opium, and camphor julep. At different periods of the day, the pain being intolerable, doses of morphia and Battley's liquor were given.

20. The patient is feverish; the brandy is omitted; a strong purge is given, but the ammoniacal mixture and the doses of morphia are persisted in. In the morning a carrot poultice; in the evening a poultice of linseed-meal, bread-crumb, and powdered camphor is applied.

21. The brandy is renewed, the bowels having been relieved. She is placed on fish diet; beef-tea and a pint of porter at any time of the day she likes.

22. A turpentine and castor-oil enema is given, which acts upon the bowels, but the pain being still urgent, the opium and camphor remedies are continued.

23. The pain is worse. The morphia repeated frequently; the same diet.

24. The patient is weak; the pulse feeble, 144. She is allowed nine ounces of brandy; repeated doses of morphia given.

25. The pain being still severe, the means of yesterday are continued to-day.

26. Things in *statu quo*.

27. Pulse 100, stronger; *ceteris paribus*.

28. Nausea and vomiting. Brandy and an effervescing draught, with laudanum and Usquebaugh, resorted to with temporary success.

30. The bowels act to-day, and the stomach is consequently more tranquil. Mutton-chops, arrow-root, and brandy.

31. The patient violently sick; the medicine suspended.

Feb. 1. Pulse better; line of separation between the dead and living parts becoming visible.

2. Again violent sickness has occurred, which is relieved by effervescing draughts.

4. The sickness returning is removed by one-drop doses of the hydrocyanic acid.

9. The patient is nearly free from pain; the mortified parts are separating, and an edge of healthy granulations is evident; the pulse 80, good; the tongue pretty clean; appetite good; bowels regular.

12. The patient is rapidly improving; the resiliency of her constitution has triumphed over the malady; the slough has nearly separated; she has, however, fits of pain in the affected toes. She sleeps well, and has a good appetite; the bowels act spontaneously; the countenance is tranquil notwithstanding an almost continual headach which haunts her, a consequence of the unmitigated venereal disease with which she is infected. The nodes on the cranial bones appear to be increasing; the fauces are suffused with a blush; and copper-coloured spots are still extant upon various points of the surface. There seems no doubt but that the bones of the toes are involved in the sphacelus as well as the teguments, and will be exfoliated.

MANSLAUGHTER BY A QUACK, AT BRIDGEND.

On Saturday last an inquest was held before Mr. Reece, Coroner, Bridgend, on the body of Susannah Thomas, aged 23, daughter of Thomas Thomas, cooper, Cowbridge.

It appeared from the evidence of *Elizabeth Arnott*, the aunt of the deceased, that deceased had been ill for the last four months, during which time she had consulted a medical practitioner in Cowbridge, who had occasionally prescribed for her, but had not seen her for six weeks previous to her death. Deceased, from reading the newspapers, expressed a strong wish to see "Baron Spolasco," who was coming to Bridgend, and who advertised the cure of every disorder incidental to the human body. Her wish was complied with, and on Thursday evening, the day of his arrival, the deceased accompanied by witness, went to the Wyndham Arms to consult the Baron; while proceeding thither, deceased was in great pain, and complained of her side being very tender, and her stomach weak and painful. She saw the Baron, who told her he knew by her eyes, that she was very ill, and that he would cure her; afterwards she would have cause to bless the hour she saw the good Baron Spolasco. Witness was not allowed to relate the symptoms of the disorder of deceased to the Baron, as he said he could know them by her bold eye. Witness paid 22s. 6d., and then the Baron gave her two pills folded in paper, and a powder, with printed directions. Witness followed the directions, but deceased getting much worse she went to the Baron and beseeched him to come and see her, as she was in a very bad state, and dying with the pain. The Baron told her to give half a wineglassful of brandy, and half a wineglassful of wine, mulled together, and *that would rouse her and cheer her spirits*. Witness was afraid to give the wine and brandy, but gave gruel, &c.; but deceased was gradually getting worse, and the pain increasing; went to the Baron, who said he would see her in half an hour: he did so; told the deceased not to be afraid, there was no danger, but that she must rouse herself, and she would soon become better. The Baron gave orders to exhibit a spoonful of castor oil, and if that did not operate in half an hour, to give another; if this dose failed, then to give a glyster of gruel, *with an ounce of turpentine in it*. The Baron then left, and in a quarter of an hour deceased died. Witness was certain the Baron did not know deceased was so bad, or so near death, although her feet and hands were cold, and the heat of the body was fast leaving it. Believes the Baron's medicine hastened the deceased's death.

Abraham Verity, Esq., Surgeon, Bridgend, sworn:—Has examined the body of deceased, and found the small intestines and peritoneum very much inflamed; the stomach was ulcerated in various places, and at its depending portion there was an orifice, through which its contents had escaped into the cavity of the abdomen. Attributes this orifice to the effects of ulceration. There were patches of the stomach in a gangrenous state, and the pyloric orifice of the stomach was very much indurated and gangrenous, all of which he attributes to the effects of inflammation. Witness is of opinion that deceased had been labouring under chronic inflammation of the stomach, and that Baron Spolasco, by exhibiting drastic medicines, produced acute inflammation, which ended in gangrene and death. Is of opinion that the medicine now produced, which the Baron gave another patient, is composed of aloes and jalap, which would, if administered to such a subject as deceased, who was weak and delicate, have accelerated her death.

Elizabeth Arnett recalled:—The Baron appeared to have only one sort of pills, folded in pink and blue paper, and one sort of powder in white paper, which were given to every patient, with the same directions to every packet, no matter what the disease was. Witness was in the room and saw ten or twelve persons have exactly the same medicine as he gave her niece, the deceased. The medicine now shown her, which was given to another patient, is exactly the same as the Baron gave deceased.

John Llewellyn, Esq., Surgeon, Cowbridge, sworn:—Attended deceased about four months ago, she was then labouring under irritability of stomach, which was liable to end in inflammation. Thinks deceased, from what he had heard, had inflammation of the stomach. Witness then corroborated Mr. Verity's testimony about the medicines.

The Jury brought in a verdict of *Manslaughter* against the "Baron Spolasco."—*The Cambrian*, Feb. 2.

MEDICAL WITNESSES AT INQUESTS, SUMMONED BY THE CONSTABLE AND NOT BY THE CORONER.

To the Editor of THE LANCET.

SIR:—On the 19th inst., I was summoned to attend an inquest to be held on the body of Joseph Russell, who was found hanging in his room on the Sunday previous. I attended, according to the summons, which was signed by the constable and issued in the usual manner. After the several witnesses were examined, the jury thought there was no occasion for the medical evidence, and they would thus save the county the expense. The Coroner has refused to pay me the usual fee. Will you have the kindness to inform me if I am entitled to it, and, if so, in what manner I am to proceed against the Coroner to obtain it.—I am, Sir, yours respectfully,

JOHN STORY.

Mile-End-road, Feb. 20th, 1839.

*** We have stated, repeatedly, that the medical witness cannot enforce the payment of the fee from the Coroner, unless he be summoned *by that officer*. A summons signed simply by the *constable* does not, in any case, entitle the medical practitioner to the fee which was awarded by the Medical Witnesses' Act. We begin to suspect that some of the Attorney-Coroners are *in* the habit of resorting to the trick of making *the constable* sign the summons merely for the purpose of annoying medical practitioners—of subjecting them to vexation and loss of time. Nobody knows better than the Coroner that the medical witness is not entitled to the fee unless he be summoned by the Coroner, and in accordance with the provisions of the Act. When the members of the medical profession are prepared to act *in union* throughout the whole of England, as the medical practitioners have recently done in Middlesex, then medical Coroners will be elected to preside at inquests, and medical witnesses will be treated as gentlemen, and, with a due sense of justice, by the officer who presides in the Coroner's Court. Medical practitioners should understand that, by the new law, the constable, in summoning medical witnesses, when he acts otherwise than as the mere messenger of the Coroner, is a nonentity in law as well as in fact. We again repeat that the summons must be signed by the Coroner himself, or the medical witness is not entitled to his fee.

OFFICE OF CORONER.

To the Editor of THE LANCET.

SIR:—Mr. Burchell, and other philosophers of the same school, tell us that the office of Coroner is "strictly judicial." This is half true, and *half* the truth is a boon that the lawyers know full well how to appreciate. But they tell us, also, that if a Coroner be acquainted with the laws of organic life he must become a "witness" as well as a judge. This is *all* false. There is a medial character, however, to which they will not advert, namely, that of the advocate,—the searching, penetrating, inquisitive advocate,

who *must* be well versed in the subject which he seeks to elucidate by the testimony of others,—the seer who, armed with the panoply of truth and knowledge, lifts the lamp of science over the immolated victim of crime or accident,—a noble and generous character, from the days of Hippocrates down to our own; while the vampire of the law prowls among the carcasses of the dead, whose fate has, perhaps, been precipitated by the heartless chicanery of which it becomes the instrument.

AUGUR.

February 12th, 1839.

NOTE FROM DR. BURGESS.

To the Editor of THE LANCET.

SIR:—I find that I have been misinterpreted in the report of the Westminster Medical Society published in THE LANCET of last Saturday. In relating the anecdote of white parents begetting black children, I did not mean to bring it forward as an argument in *favour* of those doctrines which inculcate that the mind of the mother during utero-gestation is capable of producing such extraordinary physical changes in the embryo; on the contrary, Dr. Macartney never intended that it should convey any such meaning; and my object in relating the circumstance was to show the absurdity of *some* of the arguments deduced in favour of the above doctrines.—Yours,

THOMAS H. BURGESS.

3, North Crescent, Bedford-square.

*** We offered no kind of "*interpretation*," of Dr. Burgess's statements. We merely gave an exact account of that which he said, leaving the words to interpret themselves.—REP. LANCET.

JOYCE'S AND ARNOTT'S STOVES.

(*From a Correspondent.*)—At the parish church of Downham, in Norfolk or Suffolk, there were lately introduced one of Arnott's and two of Joyce's stoves. A few Sundays after the introduction of the stoves (the overseers, having, however, in justice be it stated, used common charcoal in lieu of the prepared charcoal in Joyce's stoves) several of the charity children were taken ill, and carried out; and before the end of the service more than seventy of them were affected in various degrees. Some revived on removal to a purer atmosphere, others required various stimuli; but, happily, all were eventually restored. The churchwardens profess to be ignorant whether Joyce's or Arnott's stove be the one in fault.

BOOKS RECEIVED.

The Obligation and Extent of Humanity to Brutes, principally considered with reference to Domestic Animals. By W. Youatt. Longman and Co., London, 1839. 8vo, pp. 218.

The Physiology or Mechanism of Blushing, &c. By Thomas Henry Burgess, M.D. Churchill, London, 1839. 8vo, pp. 202.

Illustrations of Operative Surgery. No. I. Amputations. Tipper and Co., Dublin, 1839.

The Veterinarian, Vol. XII., No. 134. Longman and Co., London, 1839.

The Cyclopædia of Anatomy and Physiology. Edited by Robert B. Todd, M.D. Part XVI. Sherwood and Co., London.

The Medical Portrait Gallery, with Biographical Memoirs of the most celebrated Physicians, Surgeons, &c., by Thomas Joseph Pettigrew. Part XII. Whittaker and Co., London, 1839.

Researches in Embryology (first series). By Martin Barry, M.D. London, 1839.

Elements of Chemistry, &c. By the late Dr. Turner. Sixth edition, enlarged and revised by Dr. Liebig and Dr. Turner. Part III., No. 1. Taylor and Walton, London, 1839.

Philozoia, or Moral Reflections on the Condition of the Animal Kingdom, &c. By T. Forster, M.B. W. Todd, Brussels, 1839. 8vo. pp. 94.

Thoughts and Observations on Pauperism, Poor-Laws, and Emigration, Medical Relief, &c. By William Fergusson, M.D. Highley, London, 1839. 8vo, pp. 23.

TO CORRESPONDENTS.

Candidus. It is not the business of a journalist to put such inquiries. They can be made personally. Most probably the temperature is of no consequence. But the process should be reversed, we think; the warm water first and the cold afterwards. In *practice* this will be found the most tolerable proceeding.

Veritas. We cannot publish a petition from an anonymous person.

Communications have been received from *Philocrust*, *Candidus*, *Verax*, *Mr. Woolley*, and *Mr. Alfred Smee*. Mr. Smee's paper shall appear next week.

Un Malheureux. The case is not hopeless, but we never give medical advice in this Journal.

Attention shall be paid to the communication from Reading. The pamphlet should be treated with contempt. Notoriety is evidently the object aimed it.

Gamma. Not just yet.